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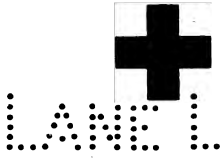

Suggestions for Prompt Aid to the Injured in Accidents and Emergencies

ILLUSTRATED

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THIRD EDITION

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INTRODUCTION

A noted surgical writer has said that the fate of an injured person depends upon the acts of the person into whose hands he first falls. The necessity and value of prompt and efficient first aid in injuries needs no comment. During the war with Spain, in the Philippine campaigns, and in the operations in South Africa, it has been demonstrated that by the prompt application of first aid dressings, the loss of life and limb has been reduced to the lowest ratio in the whole history of warfare.

In the time of an accident, the presence of a person with knowledge of what to do, and the presence of mind to carry such knowledge into effect, is invaluable. The design of this Manual is to give suggestions that will tend to enable those who follow them to render efficient first aid in an emergency. These suggestions are based upon the teachings of modern surgical practice.

The importance of avoiding manipulation and handling of an injured part, the immediate application of a surgically clean covering, the placing of the injured person in a position of comfort, and above all, the prompt summoning of a surgeon, are made paramount.

These suggestions are not intended to be elaborate. Extensiveness has in all cases been sacrificed to simplicity. Much that is ordinarily embraced in more pretentious volumes, has been omitted in an effort to select that which is most essential, simple and most helpful. Technical terms have been avoided; no attempt has been made to teach anatomy or physiology or to give instruction in the principles or practice of surgery.

This Manual is not issued solely upon the authority of the publishers, nor with the intent to advocate any particular system. In its preparation the actual experiences of first aid, so successful on the battlefield in the late wars, have been applied to civil conditions. The editor has had the assistance of surgeons of long experience in railway, mining, factory, police and ambulance service in this country and abroad; has studied the systems in use in every part of the world. From all these various sources, he has attempted to select the best and has placed them here in the simplest and plainest form. It is a first aid mauual for every day use and from it any one who can read or understand a picture can gain information which will be of service in emergency.

The illustrations are a most important feature. They can be understood without the aid of the text. For the most part, they were made expressly for this work.

The editors and publishers desire to thank the many persons who have so ably assisted in the preparation of this Manual.

INTRODUCTION TO THE THIRD EDITION.

The first and second editions of this Manual were received with marked approbation by the medical and surgical profession, by nurses, and by First Aid workers in general. These editions having become exhausted, another edition has become necessary. In issuing this third edition a revision of the Manual has been made, correcting some slight inaccuracies previously over-looked, together with the addition of new matter.

The editors and publishers are again indebted to the many workers who have so kindly commended this Manual, and whose helpful suggestions have been of great assistance in the revision of this third edition.

JOHNSON & JOHNSON,
New Brunswick, N. J., U. S. A.

HOW TO USE THE MANUAL

It is suggested that all persons who are liable, at any time, to be called upon to take charge of an injured person, should familiarize themselves with this Manual and with the material which is suggested herein to be applied in case of accidents. The best way to become familiar with the Manual is to read the directions carefully, and then to take up a study of the various suggestions in detail, with a view, as far as possible, to impress the most important points upon the memory, and in each instance to procure the article which the Manual suggests should be applied. It is further suggested that the user of this Manual should not wait for an accident to occur before testing his ability to properly handle the same—practice makes perfect.

The reader can practice upon himself, or invoke the friendly aid of one or more persons, allowing one to act as the injured person, the others carefully following the instructions given in the Manual. For the purpose of practice, bandages, etc., should be procured and actually applied. (Bandages or other articles used for practice purposes should never be applied to wounds. They should be used for practice only.)

Familiarity with the contents and use of the First Aid Packet described in this Manual is of prime importance, as the application of the dressings in this package is generally the very best thing that can be done. Practice with the triangular bandage and the cotton roller bandage, as in manner shown in the illustrations, will be very helpful.

In factories, mines, shops and other service, the Manual and all First Aid material should be placed in charge of the superintendent, foreman, or other person who is constantly on duty at such places where accidents are likely to occur. In some establishments such a person is provided with a badge, in order that all persons may know to whom to apply for aid.

The Manual should be kept hanging up or placed in a conspicuous place, that it may always be the first thing sought in emergency. All material should be kept in a closed box or closet to exclude dust or dirt. Unnecessary handling should not be permitted. Dressings should always be procured in sealed packages and should not be opened or the contents exposed, except just at the time of use. (All wound dressings should be such as are known to be surgically clean, aseptic, and be put up in sealed packages especially for this purpose. If touched they are no longer fit to be applied to a wound.)

While this Manual was primarily designed to accompany Johnson's Accident Case, and the instructions principally directed to the use of articles contained therein, the Manual may be used independently of this particular case, as the instructions and the illustrations apply to dressings which may be procured at any drug store.

Directions for the preparation of appliances are included, so that they can easily be prepared from materials found wherever the accident may occur.

No instructions in anatomy or physiology are given in this Manual—such knowledge is not deemed absolutely essential, either to the use of the Manual or to the application of First Aid. The reader who may have occasion to practice First Aid is recommended to secure, under the advice of his physician, some simple text-book upon the subject, and from such a source obtain a general outline of the structure and functions of the human body, including in a general way the bones, muscles, arteries and veins, the circulation, respiration and nervous system. By a study of the illustrations in this Manual (and the more so by reference to any work upon physiology) the general direction of the main arteries and the points where the circulation may be arrested by pressure or by the application of the means outlined in these pages may be gained. The reader is urged by all means to locate these points on himself or an assistant, that he may be able actually to apply the methods given in this Manual for the arresting of hemorrhage.

Of particular importance is a working knowledge of what to do in great emergencies, hence the sections of the Manual headed: "The First Things to Do," "Shock," "Bleeding," "Burns and Scalds," "Fractures," "Wounds," "Drowning," "Apoplexy," "Epilepsy," "Fainting," "Bites of Rabid Animals," "Poisons," etc., should receive the most painstaking study.

Finally, the layman into whose hands this Manual may fall should ever bear in mind that however great or small may be the emergency, nothing can take the place of sending for a surgeon. "A little knowledge is a dangerous thing." "Beware of an axe in the hands of a child." All of the First Aid Manuals ever printed if taken together could not transform a layman into a surgeon. Hence, it is of great value to acquire the art of knowing when to cease all attempts at first aid, and place the patient in the hands of a surgeon.

THE FIRST THINGS TO DO.

Keep cool.

Summon a surgeon at once.

Send a written message, describing the accident and injury, if possible, in order that the surgeon may know what instruments and remedies to bring.

Remove the patient to a quiet, airy place, where the temperature is comfortable, but never to an engine room.

Keep bystanders at a distance.

Handle the patient gently and quietly.

Arrange the injured person's body in a comfortable position; injuries to the head require that the head be raised higher than the level of the body; when practical, lay the patient on his back with the limbs straightened out in their usual natural position. Unless the head be injured, have the head on the same level as the body. Loosen the collar, waist-band and belts. If the patient should be faint, have his head rather lower than his feet. If the arm or leg be injured, it may be slightly raised and laid on a cushion or pillow.

Watch carefully if unconscious.

If vomiting occurs, turn the patient's body on one side with the head low so that the matters vomited may not go into the lungs.

If a wound be discovered in a part covered by the clothing, cut the clothing in the seam. Only remove sufficient clothing to uncover and inspect the wound. In case of burns, pour lukewarm water containing a little baking soda, over the clothing, before attempting to remove it.

All wounds should be covered and dressed as quickly as possible. (See instructions elsewhere in this manual). If a severe bleeding should occur, see that this is stopped, if possible, before the wound is finally dressed. (See Bleeding).

Do not touch the wounds with the hands either during examination, or while applying dressings, unless they have been previously made surgically clean, (as described under wounds).

After dressing a wound, do no more to the patient unless necessary to restore him to consciousness or relieve faintness.

If suffering from shock (See next section), place him in a comfortable position and await the arrival of the surgeon.

Do not attempt to do too much.

SURGICAL SHOCK.

This is common after very serious railway or machinery accidents, gunshot wounds, etc.

The signs of shock are a cool, clammy skin, constant vomiting and retching, weak, rapid pulse, sighing or irregular breathing, half-opened eyelids, dilated pupils, dullness of mind, and sometimes insensibility or coma. Send for a surgeon at once.

If possible, place the patient in a warm bed, or wrapped in blankets with the head low.

Remove clothing carefully; cut if necessary to save delay.

Use the first aid dressings and bind up wounds and broken bones.

Apply heat to the whole body, especially to the region of the heart, the pit of the stomach and extremities. This can be done with heated bottles of water, rubber water-bags, hot bricks, blankets and flannels wrung out of hot water, in fact anything hot that may be convenient, being careful to wrap hot articles in blankets so as not to blister or burn the skin. Do not apply heat to the head. At the same time, give hot drinks, especially black coffee; also aromatic spirits of ammonia in half teaspoonful doses, well diluted with water.

If stimulants are necessary, use hot water, tea, coffee, beef-tea broth or milk. Do not give whisky, brandy, or other spirituous liquors except by special direction of the surgeon.

If the surgeon will not arrive for some time and the patient does not revive, and provided there is no severe bleeding, give a teaspoonful of brandy or whisky in a tablespoonful of hot water every quarter of an hour, until the patient is better. Vomiting may be relieved by allowing the patient to sip a little brandy mixed with ice. Do not use any more alcoholic stimulants than are necessary on account of the depressing effect of over-dosing.

In concussion of the brain and in broken skull, and in compression of the brain, which resemble shock, also in apoplexy and in severe bleeding, give no stimulants of any kind.

Factories, mines and railroads should have at hand appliances for treatment of shock, and persons should be selected and given instruction as to their use.

In Summer always give the injured person a glass of Cold Water.

BLEEDING.

ARTERIAL.—(From the arteries.) Color of blood is bright red, comes in spurts or jets; if profuse, this form is very dangerous and may destroy life in a few minutes.

VENOUS.—(From the veins) blood is of a dark color, flows out or wells up freely from the wound in a steady stream.

CAPILLARY.—(from very small vessels) Blood slowly oozes out. Dangerous if continued, but is easily checked as a rule.

Treatment in all cases :

Summon a surgeon at once.

Have the patient lie down in a horizontal position, usually on his back. If the wound is in a limb, elevate the limb.

Cut away clothing (following seams) to expose and examine wound.

Apply pressure to the bleeding points, with finger covered by gauze, or by a compress of gauze kept in place by a roller bandage.

Keep the patient warm by artificial heat and clothing, hot water bags, etc.

When bleeding has ceased, hot drinks, tea, coffee, milk, etc., may be given, and the bandages, if very tight, may be cautiously loosened.

Keep watch for recurrence of the bleeding, when it occurs, tighten the bandages or apply pressure directly, as before.

In arterial bleeding, when wound is large and the blood comes out in spurts, cover your fingers or thumb with several thicknesses of the gauze (taken from the case), and make pressure directly in the wound, to temporarily stop bleeding. If the wound be large, crowd a wad of gauze into the depths, and press down. Then apply pressure at a short distance above, between the wound and the heart, using the tourniquet or Spanish windlass, the triangular bandage, a pair of suspenders, a piece of rubber tubing, or a rope. (See illustrations, also Bleeding from Special Parts).

If a limb is badly crushed, do not put the pressure on the injured flesh but higher up the limb above the crushed tissues.

Be careful to see that the pressure bandage is firmly fixed before leaving it. Do not leave a tight bandage on a limb too long, or complete arrest of circulation and gangrene may follow, especially in a diabetic patient. The pressure will usually arrest the bleeding in ten to fifteen minutes, after which the bandage should be removed and reapplied in such a way as not to obstruct the circulation of the part.

After Bleeding has stopped see section on Wounds and Bandaging.

BLEEDING FROM VEINS.—In venous bleeding (blood is dark and flows out), the directions, in the main, are the same as above given for treatment in all cases.

Have the patient lie down and lift up the wounded part, loosen tight clothing, cover your hand with several thicknesses of gauze and press the covered fingers into the wound, or crowd the wound full of gauze and press tight.

When the bleeding is severe, apply cold by means of a piece of ice wrapped in gauze and make pressure below the wound.

Generally, a pad of gauze laid over the wound and bound on dry, with a moderately firm bandage, will stop bleeding from a vein.

Cuts of the throat, involving the jugular veins, are the most dangerous. The hemorrhage can be stopped with pressure of the finger or pad. (See Bleeding from Special Parts.)

Rupture of the varicose veins of the legs are common. In these, elevate the limb, loosen garters, and bandage firmly below wound and apply small compress over the location of the bleeding.

SYNCOPE, OR FAINTING FROM BLEEDING.—Severe bleeding may cause fainting. This will often temporarily check the bleeding. Treat as any other fainting spell, lay the patient upon the floor or a couch, lower the head, keep the limbs elevated, apply warmth to the body; but be ready to check the bleeding again if it should start up when consciousness and the circulation are restored.

BLEEDING FROM CAPILLARY VESSELS.—This form of bleeding is known as an oozing from a small wound, and occurs in nearly every variety of wound whether large or small. Exposure to the air for a few moments will often completely check this form of bleeding. Hot water applied by means of squeezing out a mass of cloths is sometimes equally successful. Extremely cold water or a piece of ice has the same effect. Usually it is sufficient to apply a pad of Red Cross Gauze upon the bleeding part and binding the same tightly in place. If the bleeding be from the socket of a tooth, it may be controlled by packing it with plaster of Paris.

BLEEDING FROM SPECIAL PARTS

SCALP.—Press down directly upon the scalp near the edge of the wound, on the side from which the bleeding proceeds. If possible do not touch the wound with the hands. This can be avoided by covering the hands with a piece of surgically clean gauze. A little exploring will locate the artery or bleeding vessels without difficulty. A permanent compress may be made by folding gauze-cloth in a hard pad and binding it firmly with the triangular, or roller cotton, bandage. (See Bandaging, for methods of bandaging the head).

TEMPLE.—Press with the thumb upon the bone just in front of the ear, to compress the artery. (See Fig. 1.)

A permanent compress may be applied by the means of a piece of plain gauze folded in the form of a pad, and held with a roller bandage or a triangular bandage. (See Bandaging.)

FACE.—Pressure should be applied when possible firmly against the jawbone with the thumb. (See Fig. 2.) Bleeding of the cheek and lips may also be controlled by passing the thumb into the patient's mouth and grasping the cheek, just below the wound, between the thumb and the fingers, thus compressing the artery leading to the wound. A permanent pad compress may be applied by binding a folded piece of gauze with a triangular or roller bandage. (See Bandaging.)

NECK.—Stab wounds, and cut throat, or other wounds of this region require prompt attention. Without an instant's delay grasp the patient's neck (as shown in Fig. 3) with the thumb in the wound and the fingers against the spine, press the wounded vessels against the spine and not against the wind pipe, hold them there until assistance arrives. In urgent cases it is best not to substitute a pad for the finger.

ARMPIT.—If the arm be not entirely severed, roll a towel about a wine bottle or other hard round substance, or tie a hard knot in a towel and crowd it into the armpit. A roll of newspaper, or stick of wood, or other hard substance covered with aseptic gauze will answer. (See Fig. 11.) Then bring the arm firmly to the side and fasten firmly with a cotton roller bandage, or with a triangular bandage. Another method is to press the handle of a key or similar article behind the collar-bone, directly upon artery. In case the arm is severed, pressure may be made upon the artery on the first rib just back of the collar-bone, with the thumb or fingers (as shown in Fig. 4), or with the aid of a padded key.

ARM.—Arterial bleeding in the arm, may be checked as described for the armpit, or pressure applied (as shown in Fig. 5). A stick tourniquet is also useful in controlling bleeding of the arm. It is composed of two sticks bound together with any available material (as shown in Fig. 9), these are to go each side of the limb, and be drawn tightly with the binding. (Gangrene will follow if this is continued too long.) The triangular bandage applied to the arm (as shown in Fig. 6) with a wad or pad covering the wound, may be used in addition, or to relieve the pressure.

FOREARM.—Raise the forearm above the head. In addition to the pressure to the wound, or above it, place a hard pad such as a small bottle, or stick, in the front of the elbow, then bend the forearm at the elbow and bandage firmly to the upper-arm.

WRIST.—Raise the arm above the head, pressure may likewise be applied to the sides of the wound, or upon the arm or elbow.

PALM OF THE HAND.—Raise the arm above the head. Bleeding can be controlled by grasping some small hard object like a billiard ball or smooth stone covered with aseptic gauze. The pressure may be made permanent by binding the hand strongly while in this position.

FINGERS.—Raise the arm above the head, apply pressure to hand or wrist by tying with cord or a rubber band. No violent pressure is needed. If arterial branches are wounded, a surgeon may have to tie an artery in the forearm.

SPANISH WINDLASS.—This is a rough but effective method of controlling bleeding in the arm or legs, and should be used only where other methods fail or cannot be carried out. The Spanish windlass can be applied to either the arms or legs. Its construction and application are shown in Figs. 6 and 10. It should not be left for a longer time than is necessary to check the bleeding, and is only used in an emergency as a temporary expedient.

CHEST AND ABDOMEN.—Pressure can only be applied here directly upon the wound itself; if possible it is well to take a yard of surgical gauze, crumple it up in the hands and apply pressure until the surgeon arrives, or keep it in place by applying a bandage around the body if the patient is to be sent to the hospital.

THIGH.—Wounds in the thigh require prompt attention; pressure must be made upon the inner surface of the thigh just below the groin,

or where the artery of the thigh (femoral artery) comes out of the body, about two-thirds of the way from the knee to the hip-joint. (See Fig. 7.) This can be effected with the thumbs, or a rounded stick, or a key handle, or with a "Spanish windlass." The artery may also be controlled by placing in the groin a knotted cloth or a large round stone, and doubling the leg back on the thigh (this is important) and the thigh pushed forward hard against the abdomen, and tying it there with a bandage.

A piece of elastic tubing (gas tubing) or a pair of suspenders (see Fig. 12), passed around the limb several times, stretched at each time and inally made tight, is often effective, but will cause gangrene if continued too long.

Leg Below the Knee.—Apply firm pressure in the hollow just behind the knee (above the calf of the leg.) This can be effected by placing there a stick like that suggested for the armpit, and doubling the leg back until it presses hard against it. In doing this the thigh must also be doubled up toward the abdomen or the bending of the knee will soon become intolerably painful. (See Fig. 8.)

AFTER BLEEDING HAS BEEN STOPPED

If the wound has been handled or touched in the operation of stopping bleeding, cover it with a piece of surgically clean iodoform gauze, folded so as to make several layers over the wound ; let this lie next to the wound. Lay over this a layer of absorbent cotton ; bind on the whole with gauze bandages, and finally wrap with the triangular bandage or with the roller cotton bandage. Following in each case directions given under the heading "Treatment of Wounds."

Never allow an open wound to remain unprotected longer than the time employed in stopping bleeding. Use only sterile, surgically clean dressings to avoid suppuration and blood-poisoning. Remember that a soiled covering is worse than none at all.

See section on Wounds and Bandaging.

BLEEDING FROM THE NOSE.—Lay the patient on his back, raising the arms above the head. Let the patient snuff a solution of salt in water (tablespoonful of salt and water) or vinegar and water.

If this fails, take a narrow strip of Surgical Gauze and crowd a small portion at a time into the nostril until a tight plug is produced.

If bleeding is excessive or continuous, summon a surgeon.

BLEEDING FROM THE STOMACH.—(Blood dark coffee color.)

Give ice water or broken ice in a teaspoonful of vinegar, repeating the dose at intervals.

If bleeding continues, summon a surgeon.

BLEEDING FROM THE LUNGS.—(Blood bright red and often coffee color.)

Lay the patient down with body raised to a sitting posture.

Give lumps of ice, and apply cold wet cloths to the chest.

Give small portions of salt mixed with vinegar.

If bleeding continues, summon a surgeon.

INTERNAL BLEEDING.—Apply ice cold cloths to the abdomen.

In such cases the patient should be laid upon a bed or couch without a pillow, with the head slightly lower than the body.

A surgeon should always be summoned.

BLEEDING POINTS

ARTERIAL BLEEDING.—Blood bright red, comes in spurts.

Send for a surgeon.

Elevate the limb or part.

Apply pressure directly to the bleeding part or along the course of the artery and between the wound and the heart.

Pressure can be applied quickest with the hand. (Cover the hand if possible).

Pressure with the hand can be kept up only for a few minutes; substitute a pad or compress and bind it on.

In applying a pad or compress, fill the wound, (the cloth must be surgically clean).

A tight bandage or tourniquet should not be left on too long.

VENOUS BLEEDING.—Blood purple or dark color.

Elevate the part.

Remove tight clothing, garters and everything between the wound and the heart.

Apply pressure directly to the wound.

CAPILLARY BLEEDING.—Oozing.

Apply a bandage direct to the wound.

Cold or hot applications are also useful.

See section on Wounds and Bandaging.

FIG. 1.—To arrest bleeding from arteries of the temple. Pressure over artery applied with the thumb. The red lines show the course of the arteries.

FIG. 2.—To arrest bleeding from arteries of the cheek. Pressure applied to the jaw bone so as to compress artery. The red lines show the course of arteries.

FIG. 3.—To arrest bleeding from the arteries of the neck, as in cut throat. Pressure with the thumb at the root of the neck near the collar bone, outside the windpipe. Pressure with fingers against back of neck.

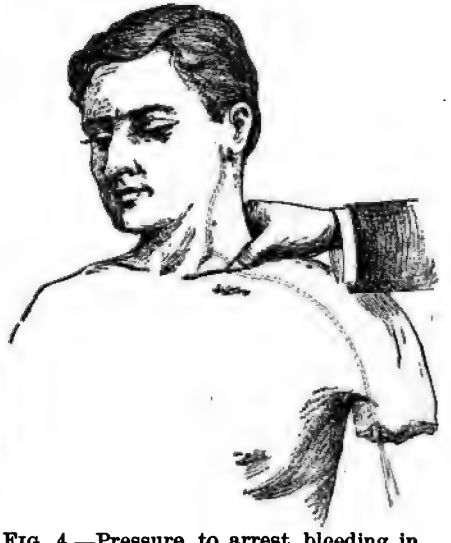


FIG. 4.—Pressure to arrest bleeding in upper part of arm or arm pit in excision of arm, pressure with thumb over artery, pressing artery against first rib. If thumb is not strong enough put door key or hard substance under thumb.

See section on Wounds and Bandaging.

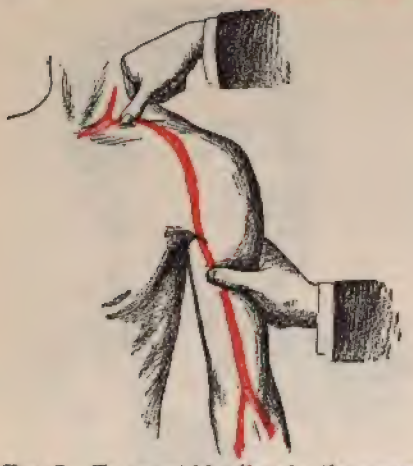


FIG. 5.—To arrest bleeding in the upper arm. Pressure against the collar bone on the inner side, and just below the bicep muscle. The red lines show the course of the arteries.

FIG. 6.—Spanish Windlass.—Applied to the arm to arrest bleeding. The handkerchief or triangular bandage should be tied so as to leave the knot over the artery. The ends of the handkerchief form a loose loop into which a stick is thrust and twisted around and around. Tighten until the blood stops flowing, but no more. The red lines show course of arteries.

FIG. 7.—To arrest bleeding in the thigh. Pressure applied to the hollow of the leg immediately below the groin, midway from the hip bone to the middle line of the body. The red line shows the course of the artery.

FIG. 8.—To arrest bleeding in the arteries of the foot or leg. A stick or knotted cloth placed in the hollow just behind the knee, and the leg doubled back until it presses hard against it, the thigh is to be doubled back upon the abdomen.

See section on Wounds and Bandaging.

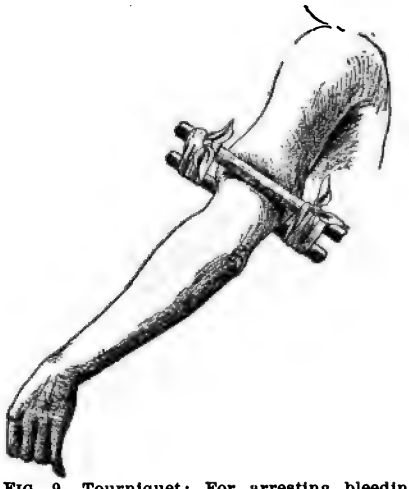


FIG. 9.—Tourniquet: For arresting bleeding from the arteries in the forearm. Two sticks tied with handkerchiefs or bandages to form compression upon the arteries tightened until blood stops, but no more. This same form may be used for leg.

FIG. 10.—Spanish Windlass: To arrest bleeding from arteries of the thigh. A stone or ball applied directly over the artery with a handkerchief or triangular bandage, the end of the bandage forming a loop to which a stick is inserted and twisted gradually until the blood stops, but no more. Very severe, but effective.

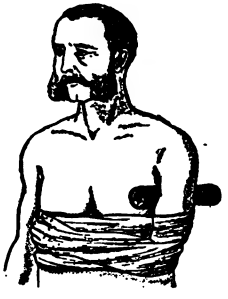


FIG. 11.—To arrest bleeding of axillary artery, armpits, etc., a round piece of wood or a good sized book, wrapped in cloth, thrust well up into the space, and arm bandaged to side.

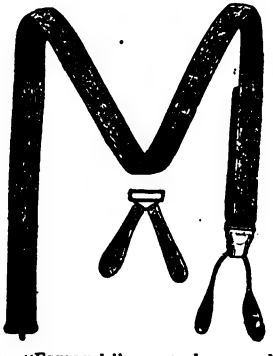


FIG. 12 —"Esmarch" suspenders used to compress artery and arrest bleeding. The elastic ribbon is passed two or three times around the limb and tightened until bleeding stops, no more.

DON'T'S FOR BLEEDING

Don't forget to elevate the limb and make the patient as comfortable as possible under the circumstances.

Don't put on cobwebs or tobacco.

Don't put on styptics, balsam or salves.

Don't put on a soiled cloth or bandage.

Don't touch the wound at all if you can stop bleeding in any other way.

Don't disturb blood-clots.

Don't give alcoholic stimulants.

Don't get excited, but try to keep cool so as to reassure the patient, who is liable to be badly frightened.

Don't leave a wound uncovered after bleeding has stopped.

Don't make pressure stronger than necessary, and especially do not leave a tight bandage on too long.

WOUNDS.

FIRST AID TO THE WOUNDED.—Lay the patient in a comfortable position while the wound is being examined and dressed.

Stop bleeding. (See Bleeding).

Do not touch the wound with the hands unless absolutely necessary to stop the bleeding. This can be avoided by covering the fingers with Surgical Gauze or Lint.

In most cases, the best step is to seal the wound from the air as soon as possible.

The simplest and best method for the above purpose is the use of the "Johnson's First Aid" packet. The directions for using it are as follows:

Cover the wound with the Lintine (felted cotton).

Over this, smoothly and not too tightly, bind ribbon or roller bandage and finally cover the whole with the triangular bandage.

If the wound is extensive, two or more First Aid Packets may be required. (See Bandaging).

DIRT IN WOUNDS.—In machinery, railroad and other accidents, every wound is liable to become contaminated with dirt and foreign substances, and the presence of these substances may prove detrimental to the healing of the wound. However, the fact should be recognized that it is usually better to defer any attempt to cleanse the wound if the service of a physician or surgeon can be obtained.

It is safer, as the rule, to temporarily bind up the wound, dirt and all, than to touch it with unclean hands.

To wash the wound with water which has not been rendered surgically clean by boiling, in the light of modern aseptic surgery, is an unpardonable sin.

A vital point is to cover the wound as quickly as possible. This will prevent the entrance of germs, through contact with the clothing and other substances, and is the procedure which has been followed in gunshot and other wounds on the field of battle, in modern wars and which has given excellent results.

The chief point is that the materials used to cover the wound must be absolutely clean; that is, surgically clean. Such is the case with all the dressings contained in "Johnson's First Aid" packet, and in "Johnson's Accident Case."

Avoid touching an open wound with the hands.

If the service of a surgeon cannot be secured, or if for any other reason it is imperative that the wound should be cleaned the following rules should be observed :

Have the water which is to be used boiled for at least ten minutes and then allow it to cool before using.

Before using, scrub the vessels, pitchers, wash basins or buckets in which the water is to be kept, with the Surgeons Soap and rinse with boiling water. (Porcelain, stone or china bowls are the best, if these cannot be had use new tin basins or new wooden pails, to hold the water.)

Next the operator should thoroughly clean his own hands.

To do this, bare the arms to the elbow and use the water which has been boiled; scrub the hands and arms thoroughly for at least ten minutes (using antiseptic soap), take a nail brush and scrub particularly about the finger nails and in the crevices. Have the finger nails cut very close. Remove all rings from the fingers.

After scrubbing, pour some of the water, which has been boiled, over the hands and arms, and rinse off the soap. Finally wash them with a little ether or alcohol. Dry the hands with a piece of surgical gauze or lint.

After washing his hands, the operator should not touch anything except the surgically clean dressing material.

A safe method is for the operator to keep his hands covered with several folds of surgical gauze or lint and thus avoid all contact of the fingers with the wound.

Dirt, bits of grass or clothing, splinters of wood, fish-hooks, pins or thorns should be picked out of the wound with a tweezers or pincers, having first made them clean by boiling the instruments in a soap-suds made of the Surgeons Soap.

If the wound is covered with grease, soot and dirt, a simple and effective method of cleansing would be to moisten a portion of the surgical gauze with turpentine or benzine and wipe off the wound.

If necessasy to flush the wound, make some weak soap-suds with the Surgeons Cresol Soap using only the water which has been boiled. Dip into this suds a wad of absorbent cotton. Take this wad and hold it in the hand a few inches above the wound, squeeze it so as to cause a stream to trickle gently over the wounded surface. This will wash away the dirt.

Do not mop the wound.

Unclean water should never be used on a wound.

If necessary to replace any of the torn portions of the wound, do not handle them with the bare fingers, but cover the hand with surgical gauze or lint, using it as a glove.

In any event avoid handling the wound, if possible.

For wounds known to have been infected, after they have been cleaned in the manner suggested above, the best dressing is the following:

Lay over the wound several thicknesses of iodoform gauze. Cover this with a layer of absorbent cotton, and bind the whole with the triangular bandage or with the ribbon roller bandage. (See Bandaging.)

No one but a trained surgeon should ever attempt to stitch a wound.

Adhesive plaster is used by the surgeon to fasten together the edges of wounds. Its use should be confined to the surgeon except in very small wounds or in cases where its use seems imperative.

In most cases the parts may be drawn together with the ribbon bandage, and over this the dressings applied. (See Bandaging.)

After the bandages are applied the injured part should be placed and maintained in a position of comfort, whether the patient remains on the spot or is carried away.

If the head be injured, the patient should lie down with the head resting upon a pillow or cushion covered with a clean towel, taking care that the injured part be kept from contact with surrounding articles.

If the arm be injured, it should, as the rule, be brought across in front of the chest and supported in a sling.

If the lower limb be wounded, it may be supported in a comfortable position by resting upon a cushion or blanket.

In wounds of the chest, the head and shoulders should be raised by one or more pillows until the patient is able to breathe comfortably.

If the abdomen be wounded, the patient should lie down, with his knees drawn up, and turned over toward the uninjured side; or upon the back if the wound be in front.

LACERATED WOUNDS.—These are quite common in machinery and railroad accidents. They are also caused by missiles, such as stones, bricks, etc., or by falling upon sharp stones and broken glass and in many other ways.

See section on Bandaging.

In these cases, bleeding is not often excessive, and the best procedure when the services of a surgeon cannot be secured, is to cover the wound immediately, by the use of Johnson's First Aid Packet ; or if the wound be extensive, dressed as noted in the previous paragraph. Then place the patient in a comfortable position to await the arrival of the surgeon or to be transported.

PIERCED OR PUNCTURED WOUNDS.—These are caused in war by bayonets, swords, etc., and in civil life by needles, thorns, fishhooks, bits of glass, splinters, and other articles.

The simplest treatment is the best.

If an object like a needle can be easily removed, do so; otherwise leave it until the arrival of a surgeon.

In any event cover the wound immediately, using the Johnson's First Aid Packet.

In pulling out the needle or other implement examine it and see if any part of it has been broken off. If any portion of it has been left behind, do not try to remove it, but inform the surgeon.

In case of thorns, nails or other objects, which would tend to poison the wound, apply a portion of iodoform gauze next to the wound. Over this lay a pad of absorbent cotton or lintine and bind with a bandage.

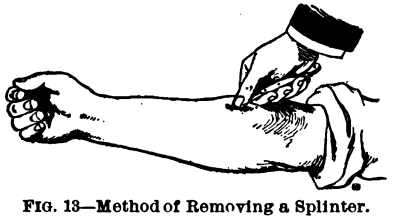


FIG. 13—Method of Removing a Splinter.

To remove a splinter or other object well imbedded in the flesh, take an ordinary pen knife, boil the blade in water for ten minutes and pass it once or twice through the flame of a lamp ; clean the hands according to the directions already given in this manual; slip the point of the pen knife under the end of the splinter or other object, and catch it against the blade with the thumb nail and draw it out. It may be necessary to make a slight enlargement of the wound so as to reach the splinter.

Fish hooks and arrows usually do not penetrate deeply and should be pushed through the tissues, never drawn back unless the barbed point has been cut off.

After a wound has been bandaged do not uncover it. If it bleeds put on more bandages.

Gunshot wounds should be treated as other wounds, first checking the bleeding, if severe, and making the patient as comfortable as possible. No better treatment can be desired for gunshot wounds than to dress at once with the contents of Johnson's First Aid Packet.

BRUISES.—In slight bruises apply lint or surgically clean plain gauze, folded and dipped in water.

If severe use hot water.

In very severe cases involving shock, apply warm blankets, warm bottles, hot flat irons covered with cloth; in fact anything hot or warm, covered so as not to burn the skin.

At once give hot drinks, preferably coffee. Alcoholic drinks should not be given. A surgeon should be summoned immediately.

POISONED WOUNDS

SNAKE BITE.—Don't stop to kill the snake. Tear open the clothing to expose the wound. Put a handkerchief, strap or rope quickly around the limb above the wound draw it tight enough to partially stop circulation. Better still, tie it loosely and then twist it as shown in Figures 6 and 10.

Take the tip of a knife blade and open the one or two holes made with the snake's fangs. The best way for a layman to do this is to pass the blade down into the wound and cut outward; cut lengthwise rather than around the limb.

Be careful not to cut and artery, but this can be stopped by pressure. The snake bite is the most dangerous.

Let the blood run from the knife cut, at the same time rub the wound with the finger in order to dislodge any of the tenacious poison which remains.

Wash the wound with whiskey rather than to give whiskey to the sufferer.

Get the patient to a surgeon as quickly as possible, keeping the pressure applied.

If a surgeon cannot be had, get to a place where the wound can be washed with water, or if possible to procure, wash with a solution of

See Bandaging for method of dressing wounds.

bichloride of mercury, one to one thousand. (The ahtiseptic tablets in Johnson's Accident Case may be used one tablet to one-fourth pint of water.)

Another method often recommended, after opening the wound as above described and bleeding has stopped, is to burn the wounded surface with nitrate of silver (lunar caustic). In any event the pressure bandage should not be released for several hours unless directed by the surgeon. When the pressure is released it should be done gradually, a few moments at a time to relieve pain and then retighten.

BITES OF DOGS.—Wash with the Surgeons Cresol Soap in the Accident Case, and apply hartshorn.

If the dog has been sick, the wound after cleansing may be sucked.

Cases of hydrophobia are very rare. If this is suspected summon a surgeon and take his advice before being alarmed.

Bites of rats, cats and other animals are less dangerous than those of dogs.

Clean them well with Surgeons Cresol Soap and apply hartshorn.

Summon a surgeon.

S INGS OF SCORPIONS, CENTIPEDES, TARANTULAS.—Apply hartshorn at the point where the sting entered.

Then apply cold water or ice and see a surgeon.

The stings of ordinary insects, such as spiders, mosquitoes, etc., should be wet with a solution of table salt or hartshorn.

Cold water or wet earth may also be applied.

If painful consult a surgeon.

WOUND DRESSING HINTS

Send for a surgeon.
Do not touch the wound with the hands.
Arrest bleeding.
Do not disturb blood clots.
Remove foreign substances when it can easily be done.
Never probe for a bullet.
Bring the edges of the wound together.
Cover the wound as quickly as possible, using only surgically clean materials.
Keep the part quiet with a sling or splint.
Rest is essential to the healing of wounds.

BROKEN BONES—FRACTURES

SIMPLE FRACTURES.—A break of the bone without wound or injury of surrounding structures.

COMPOUND FRACTURES.—When a bone is driven through the skin by the accident which breaks the bone, or when a missile, such as a piece of shell or rifle ball, breaks the bone and makes a wound leading to the fracture.

TREATMENT.—Place the patient in as comfortable a position as possible, supporting the injured portion upon a pillow, cushion or pads of cloth or other material.

Remove the clothing from the injured part, being careful to avoid giving pain to the patient by unnecessary handling.

Cut the clothing in the seams, if possible.

Do not attempt to set the bone.

Handle a fractured limb as carefully as you would a delicate piece of rare china.

In a simple fracture where a physician cannot be obtained, or when necessary to move the patient to any distance, lay the limb upon a splint properly cushioned, and apply a bandage to keep the parts quiet and in such a way as to prevent the fragments of bones moving upon one another.

In compound fractures treat the bleeding and dress the wound according to the rules given in this book, before applying splints.

A good practice in compound fracture is to cover the wound with iodoform gauze next to the wound; cover this with absorbent cotton and wrap the whole with the triangular bandage and apply a splint as in a simple fracture, being careful not to bandage too tightly.

SPLINTS.—The chest can be made to do good service as a splint for the arm, by confining the arm to the side with a wide roller bandage.

In a broken leg, the uninjured leg will make a good temporary splint in a similar way.

In order to properly treat a broken limb, the splint must extend so as to keep the joints quiet above and below the injury.

The width of a splint should be a little greater than the thickness of the injured limb.

The surface of the splint which is to come next to the patient should be cushioned with some soft and elastic material.

Before applying a sling or splint bind up the wound.

For this purpose either absorbent cotton or ordinary cotton will be found serviceable.

In many cases it is better to have two splints, one on each side of the limb, both held in place by the same bandage.

Small splints may be cut from cigar boxes, paste-board boxes, book covers, laths, shingles, etc., flour or sugar-barrel staves, broom or mop handles, even fire-tongs, pokers and shovels, desk rulers have been employed, these should be well covered with soft paper, or what is preferable, absorbent cotton, lint, or gauze.

In the shop or factory, tools and their handles, umbrellas, canes, parasols, may be used.

In absence of these, bunches of twigs from bushes, straw or stiff grass may be utilized.

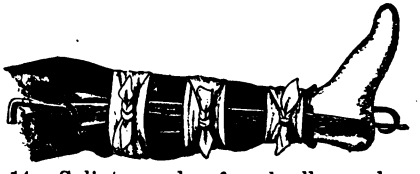


FIG. 14.—Splints made of umbrellas and canes.

In the army, soldiers have utilized bayonets, swords, ramrods, rifles and other articles for temporary dressing so that the injured person could be carried to the hospital.

The triangular bandage from Johnson's First Aid Packet folded in a broad or narrow cravat, or a roller cotton bandage may be used tc hold the splints in place.

In the absence of these, pocket handkerchiefs, towels, garters, suspenders, cords or straps may be used.

In fixing a splint, care should be taken to avoid causing pain or bandaging the part so tightly as to interfere with the circulation of the blood.

The tips of the fingers or toes should be left uncovered so that they may be seen and felt occasionally to ascertain if their circulation is good.

In raising a broken limb it should be supported by the hands of assistants gently slipped under it, above and below the injury, so that there is no bending the limb at the point of injury, which would cause pain and some tearing of the soft parts.

In applying a splint, the help of a second person should be obtained to support the limb while the dressings are being adjusted. (See Bandaging).

For method of applying splints and slings see Bandaging

SLINGS.—The triangular bandage and roller bandage can easily be made into a sling to support a broken limb. (See Bandaging).

When they are not at hand the sleeve may be utilized as a sling for the arm, by pinning it to the breast of the coat; or the front flap of the skirt of a coat may be used by turning it up and pinning to the coat.

Two handkerchiefs form an excellent sling; the first to be tied around the neck as loosely as possible, the second, tied about the first in the same manner, and the arm slipped through it.

FRACTURE OF THE SKULL.—A surgeon should be sent for immediately. The patient placed in a convenient shady place on his back with head and shoulders slightly raised and kept absolutely quiet.

If there is an open scalp wound, make a pad or compress of surgically clean iodoform gauze and bandage loosely over the wound.

If there is any evidence of fever, cloths wet with cold water or bags of ice may be applied to the head. A piece of flannel should be placed under the ice bag so as not to freeze the scalp.

FRACTURES OF THE SPINE.—Lay the patient flat on his back and, if possible, he should not otherwise be disturbed until the surgeon directs.

Turning the patient to one side, or on his face, may prove fatal.

Apply hot blankets to the body, if patient is cold.

FRACTURE OF THE NOSE.—Bleeding may be checked by plugging the nostrils with cotton or gauze.

Any wound should be dressed as directed in "Wounds"; the nose bandaged and the patient sent to the surgeon.

FRACTURE OF THE JAW.—Gently put the bones in place.

Cover any open wound with iodoform gauze.

Apply a bandage, as shown under Bandaging.

FRACTURE OF THE COLLAR BONE.—In fractures of the collar bone, the affected shoulder drops. The injured person commonly supports the elbow and forearm so as to relieve the weight of the limb from the broken bone. Lay the patient on his back on a hard, flat, hair mattress or settee, with a folded blanket under him without any pillow. Keep him in this position until the surgeon comes.

Any wound present may be covered with iodoform gauze loosely held in place.

If it is required to move the patient before a surgeon can attend him make pads of several folds of surgical gauze, place a pad under each armpit and bandage the arms to the sides.

To send for a surgeon is of first importance.

FRACTURE OF THE SHOULDER BLADE.—Apply a large arm-sling made of a triangular bandage, (see Bandaging) then bandage the arm to the side with another bandage, as in fracture of the collar bone.

If a surgeon cannot be reached, place the forearm across the chest, the tips of the fingers reaching the opposite shoulder, and hold in this position with a sling or a strip of adhesive plaster extending from the sound shoulder over the outside of the entire arm to the point about midway between the shoulder blades. The bandage may be carried around the body, enclosing the arms in place. (See Bandaging).

Any bruises should be covered with iodoform gauze held in place by a bandage.

FRACTURE OF THE RIBS.—The patient should be moved as little and as gently as possible. His head and chest elevated, preventing interference with his breathing.

He may lie upon the uninjured side or on his back, or may stand up.

Wide roller cotton bandages carried around the chest several times so as to cover the injury, may be used.

If a surgeon will not arrive within several hours, or it is required to transport the patient to the surgeon, put on the side of the chest where the break is, long, wide strips of "Z O" Adhesive Plaster placed parallel to the ribs, and apply quite snug, beginning at the lower part of the chest and going up, each strip being made to overlap the one just below. Each strip should extend from the spinal column to the middle of the breast bone, or beyond.

Broken Thigh.—Lay the patient on his back, or a little inclined to the injured side, with head and shoulders slightly raised.

Cover any wound with iodoform gauze, loosely held in place with a roller or triangular bandage. If necessary to carry the patient to a hospital, apply a splint, using a board, broom handle, musket or other rigid material, that will extend from below the feet to the armpit and keep the fractured bone at rest.

Pad with absorbent cotton or other available material laid on the outer side of the injured limb.

Draw the limb out straight to its full length and bandage the splint to it by bandages above and below the break, about the knee and ankle and one about the waist. (See Bandaging).

If the patient is to be transported, finally bandage the injured limb and the sound one together.

See Bandaging for method of applying splints and slings.

Fracture or Cut of the Knee-pan—Do not bend the leg, but place the patient on his back with the injured leg somewhat elevated upon pillows.

Cover any wound with iodoform gauze. Apply ice to the joint.

Make a pad about three inches thick (for this purpose, paper, or a towel wrapped up in surgical gauze or lint, may be used).

Fig. 15.—Splint for fracture of knee pan. May be fastened with Adhesive Plaster or Roller Bandage.

Place this pad in the hollow at the bend of the knee.

Place a similar pad on the under part of the heel.

Prepare a splint long enough to reach from below the heel to the thigh under the leg. Bind the splint at the ankle and the thigh, also above and below the knee.

Fracture of the leg below the knee.—Lay the patient on his back.

Draw the leg down straight and place it on a soft pillow or cushion.

Fig. 16—Pillow or Cushion Splint for Leg.

Cover any wound with iodoform gauze, binding the same on loosely with a ribbon bandage.

Place a padded splint made of boards or sticks on the inner side of the leg and bandage firmly.

If a splint is not at hand, a pillow or cushion made by stuffing a bag with straw or cotton, may be used. If both bones are broken apply splints on both sides of leg.

If the patient is to be transported, bandage the splinted leg to the other member.

Broken Joints.—Breaks near the joints are very serious and need extreme care.

Bend or move the joint as little as possible. Apply light splints on all sides of the joints.

Lay the limb on a pillow.

Cover any wound with iodoform gauze and apply cold wet cloths

Fracture of the Foot.—Make two triangular splints (see **Fig. 17**) padded well with cotton or lint, and bandage to the side of the foot. Place another splint on the sole of the foot.

Broken Upper Arm.—Place a pad of folded lint in the arm pit and extending under the arm. (A towel or newspaper wrapped in cloth will answer). Draw the elbow down to the side. Bind the upper arm to the side of the chest with the traiangular, or wide ribbon bandage. (See Fig. 16).

Place the forearm in a sling, so arranged that the hand is slightly higher than the forearm. A sling at the wrist will answer the purpose. For a fracture in the middle of the upper arm apply four narrow splints on all sides of arm; secure by roller bandage and place the forearm in a sling.

Broken Forearm.—Place the forearm across the chest, the palm of the hand turned in and the thumb pointing upward. Place padded splints on the sides of the fracture. The splints should extend from the elbow to below the wrist; bandage the splints and place the arm in a sling.

Broken Wrist.—Apply a well-padded splint made of pieces of wood, cigar boxes, pasteboard, tin, wire or other material. The pad should extend from the fingers, well up to the forearm on the inner side of the hand. A similar pad, but shorter, should be placed upon the back of the hand and the wrist and the part wrapped smoothly in a bandage before applying the splint.

Fracture of the Hand.—Make a splint from thin wood, cigar boxes, pasteboard or material of any sort, long enough to extend from the tip of the fingers to the forearm. Pad this splint well and apply it to the palm, taking care to have a thick wad of padding in the palm itself.

Bind the splint in place and put the arm in a sling, with the hand rather lower than the elbow.

Fracture of the Fingers--Make a splint of cardboard or any suitable material, sufficiently long to extend from the tip of the finger up to the wrist. Pad the splint with cotton and bind it firmly in place, and support it by a small sling.

In all Cases of Fracture.—Cover open wounds with iodoform gauze. It is necessary that a surgeon should examine the case from time to time in order to see if there are any complications and if the bones are uniting properly.

For method of applying splints and slings see Bandaging.

FIG. 16. Method of binding fracture of upper arm.

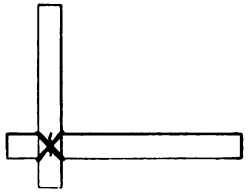


FIG. 17.—Triangular splint of two pieces of wood for fracture of the foot

FRACTURE BOX

Every establishment where fractures of the lower leg are liable to occur should be provided with what is known as a Fracture Box.

This consists of a floor, a foot piece and two side boards hinged to the floor that they may be dropped upon a level with it. This is to facilitate the placing and removal of the limb.

When needed for use the sides are lowered to a level with the floor and the whole thickly padded with cotton or other soft material. The injured limb is then placed upon the floor, the foot not quite touching the foot board, which is also thickly padded; the sides are then raised into position and tied by a piece of rope or bandage around the entire box at each end. All space between the limb and padding must be firmly wadded to prevent the slightest movement of the fractured limb. The box should extend above the knee-joint to prevent motion from this source.

Fractures of the foot or knee-cap can be handled with this fracture box.

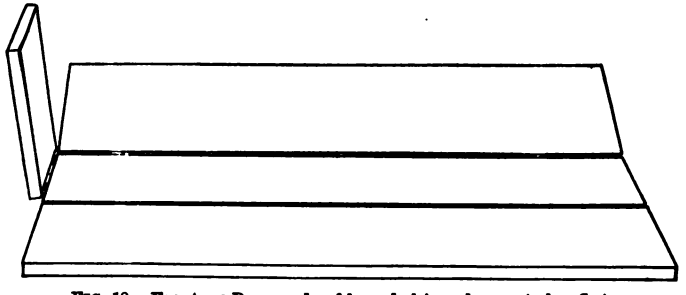


FIG. 18.—Fracture Box made of boards hinged so as to lay flat.

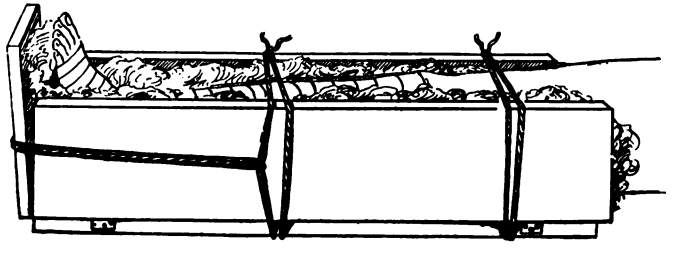


FIG. 19.—Fracture Box, padded and bound ready for transportation.

MACHINERY AND RAILROAD ACCIDENTS

These accidents are generally the cause of very severe tears, the wrenching off of arms, legs, fingers or toes, or of crushed members, very frequently occasioning severe lacerations, bruises or cuts. The general method of treating wounds or fractures occasioned by these accidents will be found under the head of "Fractures," "Wounds," "Bleeding," etc.

In severe accidents of this class it is necessary that some person should take full charge and direct all operations.

The injured person or persons should be conveyed to a place of safety nearby, away from the crowd and where there is plenty of fresh air. Shock almost always follows severe accidents of this character and is the most common cause of death.

This should be treated as directed under heading of "Shock."

Severe bleeding is not usual after railroad and machinery accidents as the wounds inflicted are such that the blood vessels are generally closed, because they are torn and twisted off.

Small wounds, whether cuts or tears, should be treated by the methods suggested for incised or lacerated wounds.

Usually it will be sufficient to use the Johnson's First Aid for Wounds packet, covering the wound with the Lintine, and binding with the ribbon bandage, and afterwards wrapping the whole with the triangular bandage.

Care should be taken not to touch the wound with the bare hand while applying the bandage. (See Bandaging).

Should the surface be soiled with dirt or foreign matter, the better practice would be to wipe it gently with a wisp of gauze and then to cover with a strip of iodoform gauze. Bind this on with the ribbon bandage.

Do not attempt to cleanse the wound unless surgical assistance will not arrive for many hours, in which case proceed as directed under wounds. The solution of Camphenol in Johnson's First Aid Cabinet is an excellent wash for cleansing and disinfecting wounds. Use according to directions on the bottle, cleansing the instruments in boiling water or soap suds.

Large wounds, tears or lacerations must be handled carefully. If a surgeon will arrive soon, no better proceeding can be followed than to temporarily cover the part with iodoform gauze and wrap the same in the triangular bandage.

If a finger or toe has been cut off put it back in place and quickly bind it up.

After cleansing, put the torn parts in position without touching with the hand. This may be done by using tweezers or forceps, first cleansing the instruments in boiling water or soap suds.

Cover the wounds first with iodoform gauze, using several thicknesses; bind this on with roller gauze bandages and finally wrap with the triangular bandage, or with the ribbon cotton bandage.

If a splint be required it is to be applied after the wound is covered.

In cases of severe pain, cold or hot cloths (whichever are the most comforting) may be applied near the injured part.

For Contusions.—See Bruises (page 20). Do not apply cold in the case of severe bruises or to old persons. In all cases the parts should be elevated and put at rest.

CRUSHED FINGERS OR TOES.—These should be gently moulded into shape.

Do not handle them with the naked fingers. Wrap the hand in layers of surgical gauze as a glove.

Even if a finger or toe hangs by a mere thread, or is entirely severed, put it back in place as quickly as possible. The surgeon may save it.

First, cover the wounded part with iodoform gauze, not too tight.

Cover this with a ribbon roller gauze bandage.

Lay over all one or two thicknesses of absorbent cotton and wrap the whole with the triangular bandage, or with the ribbon roller bandage.

The splint is seldom necessary, but may add to the comfort of the patient by preventing accidental injury during sleep, etc.

CRUSHED HANDS AND FEET.—Have the patient lie down.

Wrap the site of the injury first in iodoform gauze, several thicknesses, and lay out rather loosely.

Bind loosely with ribbon gauze bandages. Over this lay one or two thicknesses of surgical gauze and enclose the entire part with a triangular bandage.

If the hands or feet have been torn entirely off, place the limb in a position where the injured part is higher than the body.

CRUSHED ARMS OR LEGS.—Do not disturb the clothing except to cut it away from the injury or to control the bleeding if excessive.

Wrap the injured part first with several thicknesses of iodoform gauze laid on rather loosely.

Hold this in place with ribbon gauze bandages.

See wounds and bandaging.

Over this lay one or two thicknesses or sheets of absorbent cotton and wrap the whole with the triangular bandage.

CRUSHED CHEST.—Crushes of the chest or lower part of the body allow but little chances for relief, but the patient should be placed in as comfortable a position as possible, usually upon his back.

Any wound should be covered with iodoform gauze and over this layers of surgical plain gauze and cotton.

Warmth should be applied and moderate stimulation, the patient should be made as comfortable as possible under the circumstances.

BURNS AND SCALDS

Three classes are generally recognized :—

Simple redding of the skin,—first degree.

Accompanied with the formation of blisters,—second degree.

Charring of the skin and ulceration, of all degrees, up to complete destruction of the part,—third degree.

Burns of the second and third degree, especially when covering large areas, require immediate medical attendance.

In severe burns there is liability to shocks and prostration. The general directions for treatment of such a case would be to transport the patient to a place of safety, then remove clothing by cutting away with a knife or scissors. If the clothing sticks, do not pull it off, cut around it and wet it with water or oil, promptly exclude air by covering the wounded or injured surface.

As the pain attending a burn is very intense, care should be taken not to expose too large a portion of the surface to the air at any one time and to cover as quickly as possible with something that will exclude the air; this should be done the moment the covering is removed.

When the burn is extensive, expose and dress a small portion of the burn at a time.

Never hold the burn to the heat, but warm moist cloths are sometimes grateful, especially if wet with a warm solution of baking soda (bicarbonate).

When a person's clothing catches fire, make him lie down immediately, or throw him down if necessary.

Always cut clothing away, never pull or tear it.

Wrap him quickly in a blanket, cloak or shawl, preferably some woolen material, and smother the fire by pressing and patting upon the burning points from the outside.

Have water ready, and in removing the wrapping, pour the water over the burning point.

Serious degrees of shock usually follow such burns. In cases of severe shock it is heroic treatment to lay the patient on a sheet and lower him, clothes and all, into a bath tub full of water, moderately warm. This will relieve the pain and shock.

It is best in these cases not to attempt any dressing of the burns, simply to cover them with a layer of gauze, then a layer of lint, over this a layer of absorbent cotton, outside the whole a sheet or blanket, and await the arrival of the physician, or transport the patient to a hospital.

In slight burns or scalds, put a teaspoonful of baking soda in a pint of boiling water, stir well, in this dip a piece of lint and carefully cover the burns and scalded places; cover this with absorbent cotton and finally wrap with the triangular or roller bandage.

In more severe cases, saturate lint with perfectly fresh salad oil, olive oil, sweet oil, vaseline or petrolatum. In the absence of these the white of an egg may be used. A very common practice is to apply carron oil (equal parts of raw linseed oil and lime water). In absence of oils, dust the burned part with starch, flour or toilet powder, or if nothing else is available use moist earth or clay.

Cover the whole with a layer of lint, over this a layer of absorbent cotton, and finally wrap with a triangular bandage.

Burns from caustic lye, strong ammonia and similar substances should be first thoroughly flooded with water and then with vinegar, and subsequently treated as if burned by fire.

Burns from acid, vitriol, etc., should be first flooded with water and washed with a solution of baking soda or lime water. If nothing else is available, take chalk, tooth powder or a portion of mortar from the wall, crush it and stir it up with water and apply on lint to counteract the acid. After washing, treat as a burn by fire.

Use a weak solution of washing or baking soda in the case of drinking an acid.

Burns of the inside of the mouth or throat caused by drinking hot fluids or swallowing chemicals. Apply oil or the white of an egg, by

drinking, or pouring from a spoon. In the case of caustic potash, ammonia and the like, rinse the mouth and throat with weak vinegar,

If a fragment of lime gets into the eye, don't try to take it out but flush with water and bathe it with diluted vinegar or with lemon juice, a teaspoonful of either to a cup of warm water.

Burns by electricity or lightning are to be treated the same as burns by fire. (See Electricity Accidents).

FROSTBITE.—Carry the patient to a closed room without a fire, undress carefully.

Rub the frozen parts, or the whole body with snow or bits of ice, otherwise put patient in cold bath, keeping up a vigorous rubbing of the surface affected; warm coffee or tea may be given as a stimulant.

If the person has ceased breathing, use methods of artificial respiration (see Drowning). As the patient revives, carry him to a room slightly warmer, and cover loosely with a blanket.

Afterward rub with a cloth wet in warm water, whisky or with diluted alcohol.

SUN BURNS.—Treat as a mild scald, covering with a weak solution of baking soda, oils, vaseline, or with white of an egg, then with lint and bandage.

Camphenol Solution may be applied in burns of the first degree, in frost bite and in sunburn. (See directions on the bottle).

SUNSTROKE.

Remove the patient to a dry and shady place loosening collar, neck tie, or any tight clothing.

Pour cold water over the head and face, and if very hot, rub body with pieces of ice. In prostration from excessive heat, not sunstroke, place the patient on his back, with his head level with his body, and loosen clothing. Apply heat to the surface of the body and extremities. Bathe the face with warm water, into which a little alcohol or whisky has been poured. In prostration from drinking too much ice water when overheated, loosen clothing, place on back with head slightly elevated. Give hot drinks, apply heat to the spine and the extremities. Don't give any alcoholic stimulants. Tea, coffee or warm milk may be used.

In exhaustion from heat due to hard work and confinement in close, hot atmosphere, cover the body with blankets and apply heat to the extremeties.

Send for a physician as soon as possible.

Hot water, hot tea or coffee, beef tea or broth are better stimulants than whisky.

FAINTING.

Fainting and shock resemble each other closely and are often confused. Shock usually follows severe injuries, is permanent and serious. Fainting is temporary. Shock is seldom accompanied by complete unconsciousness.

In fainting, usually little treatment is demanded, but in cases where the heart is diseased or very weak, the patint will perish unless prompt treatment is given. Lay the fainting person out flat at once, with the head as low, or lower than the body. Fainting may be often prevented by lowering the head and sometimes relieved by this method .See that he has fresh air to breathe, by opening windows and keeping bystanders at a sufficient distance.

Remove or loosen heavy wraps, tight collars, corsets, waist-bands. Water may be sprinkled or gently dabbed upon the face, and smelling salts, spirits of camphor or ammonia held under the nostrils, without touching them. The person doing this should be very careful not to scald the nose of the patient by holding these applications too close or to use them too long. The limbs of the patient should be elevated and rubbed toward the body to quicken the circulation. Artificial respiration may be required, or traction upon the tongue. (See Drowning.) If the person is slow in reviving, apply gentle heat, or mustard plasters, to the pit of the stomach. After recovery, a cup of hot tea or coffee, or a very moderate quantity of an alcoholic stimulant, such as wine or or whisky well-diluted with water, may be given.

FITS.

In every case they are to be treated very much like fainting.

In a patient suffering from hysterics, an application of mustard plasters to the soles of the feet and to the wrists is often of benefit, aided by kind and soothing treatment. Heroic measures, such as dashing water in the face, strong emetics, etc., are to be avoided.

In the case of epilepsy there is no use struggling against the movements of the patient, except to prevent him from injuring himself. A folded towel, or piece of soft wood, may be thrust between the teeth to prevent the usual biting of the tongue when he grinds his teeth.

When the convulsion has passed, rest is the best possible remedy, and the patient should be allowed to sleep.

In apoplexy and uremia, rest and the application of cold wet cloths to the head with the head elevated is the best possible treatment, until the arrival of the physician.

Strong ammonia (hartshorn) should never be brought close to the nostrils.

UNCONSCIOUSNESS OR INSENSIBILITY.

Concussion or stunning, caused by blows or falls upon the head or fall upon the feet, may cause mental confusion for a time, and may be accompanied by laceration of brain substances with hemorrhage and clot.

Alcoholic intoxication closely resembles apoplexy. Every doubtful case should be treated the same as cases of apoplexy until the attending physician has decided.

In all cases, before the arrival of a physician, it is safe to secure quiet and rest by laying the person flat upon the back with the head a little raised ; heat may be applied to the body if it should appear cold. If there should be great heat of the surface, especially during very hot weather, cold may be applied to the body and head, or the body rubbed with ice. Use no whisky or wines.

The cautious inhaling of smelling salts or hartshorn, followed by some warm drink, may be permitted, provided there is a long wait before the arrival of the physician. But all this must be done with care with the head lifted up so that the patient may drink more readily, for in this condition the liquids are liable to enter the lungs, instead of the stomach, if poured in too rapidly.

ELECTRICITY ACCIDENTS.

The first thing to do is to have the current shut off, or release the injured person from contact with the conductor of the current, if this is still acting upon him.

The person who attempts this must not touch with his bare hands or skin or with any part of his body, either the patient or a live wire or a lamp or generator, while any part of his body is in contact with the ground, either directly or by means of a moist or metal surface. He should, if possible, put on rubber boots and shoes and rubber gloves. If these are not at hand he may use a dry board for the feet, and for the hands, a number of coats or folds of woolen cloth or paper. A thick bundle of silk is also a good insulator. In cutting a wire, the feet should be protected as just indicated, and if an axe or hatchet be used it should be one with a dry wooden handle. After a live wire is cut, the end should be wrapped or insulated with a piece of cloth or rubber.

In electrical accidents shut off the current.

The person who has received the shock should be laid down ; his clothing loosened and he should be given fresh air.

The body should be kept warm.

If breathing is suspended, artificial respiration or rhythmical traction of the tongue, similar to the methods followed in cases of drowning, may be used. If the heart has stopped beating, several hard taps or blows with the hand may be given which may cause it to start up again. Burns of the surface caused by electricity may be treated in a similar manner to burns from fire.

A surgeon should be summoned promptly in all cases.

SPRAINS.

The most important thing is to secure rest until the arrival of the surgeon.

If the sprain is in the ankle or foot, place a folded towel or cloth around the part and cover with a bandage. Apply moist heat. The foot should be immersed in a bucket of hot water and more hot water added from time to time so that it can be kept as hot as can be borne for fifteen or twenty minutes, after which a firm bandage should be applied (by a surgeon, if possible) and the foot elevated.

In sprains of the wrist, a straight piece of wood should be used as a splint, cover with cotton or wool to make it soft, and lightly bandage, and carry the arm in a sling.

In all cases of sprain, the results may be serious, a surgeon should be obtained as soon as possible. After the acute symptoms of pain and swelling have subsided, it is still necessary that the joint should have complete rest by the use of a splint and bandage and such applications as the surgeon may direct.

Strains.—The wrenching or tearing of a muscle or tendon. Strapping with adhesive plaster or a bandage until given attention by a surgeon is the best treatment.

DISLOCATION.

Simple dislocation of the fingers can be put in place by strong pulling aided by a little pressure on the part of the bones nearest the joint.

The best that can be done in most cases is to put the part in the position easiest to the sufferer, and to apply cold wet cloths, while awaiting the arrival of a surgeon.

Nothing can take the place of sending for a surgeon

FOREIGN BODIES IN THE EYE, NOSE AND EAR.

FOREIGN SUBSTANCES IN THE EYE.—Cinders, dust, sand and small objects in many cases can easily be removed from the eye by simple means.

In no case should the eye be rubbed. Tears will often wash such particles into the corners where they can be seen and carefully wiped out with a wisp of absorbent cotton or surgical gauze.

If the body is lodged or hidden from view under the upper or lower lid or embedded in the cornea a grain or two of whole flaxseed will sometimes assist in its removal. A very successful method is to catch the upper lid by the lashes and pull it away from the eyeball and down over the lower lid, hold it there for a moment and blow the corresponding side of the nose vigorously, then let go and allow the lid to recede of itself, the free flow of tears will wash the dust particles into the corner of the eye, or they will be caught by the lower eye lid.

If this does not succeed, the mucous membrane and cornea should be carefully inspected. In order to do this the upper lid should be everted. Every intelligent person should learn this manipulation. It is performed as follows: The patient is told to look down and

FIG. 20.—Method of everting eye lid to find foreign body.

while he does so, with the lashes, the edge of the upper lid is pulled first forward and downward then pulled away from the globe and upward over the point of the thumb or forefinger of the left hand, which is held on the lid or a narrow lead pencil. To assist in the examination a magnifying glass may be employed, in order the better to discover small fragments.

Any visible loose fragments should be removed with a bit of surgical gauze or an absolutely clean piece of cloth or absorbent cotton twisted around a match stick with clean fingers.

Do not touch the eye with dirty fingers or with unclean cloth or pocket handkerchief.

Never use a dirty knife blade, or needle, in the eye to remove particles of dust or cinders, or inflammation may set in and disastrous results may follow.

If the fragment is imbedded in the cornea, there is great danger of infection and loss of the eye, better leave it for a skilful physician.

For the removal of any irritation after a substance is removed, a drop of concentrated sugar solution freshly prepared with recently boiled clean water, may be put in the eye, or the eye washed repeatedly with warm water containing a little salt (a small teaspoonful to the pint).

Do not apply eye washes or poultices except under the direction of the surgeon.

Immediately after treatment, the eye should be covered with surgical gauze, then a roller or triangular bandage loosely carried around the head to keep it in place, and a surgeon consulted. (See Bandaging).

Foreign Bodies in the Nose.—Blow the nose hard while holding the opposite nostril closed; excite sneezing by tickling the nose or by giving snuff; instruct the patient to take a full breath and close the mouth then give a sharp blow on the back between the shoulders.

In a child such an obstruction may be removed by blowing in the opposite nostril, or in the child's mouth.

If these efforts are not successful summon medical aid or take the patient to the doctor's office.

Foreign Bodies in the Ear.—Most foreign bodies in the ear may be truly said to be less dangerous to the patient than unskillful efforts made to remove them. Never insert wire needles or pins into the ear to aid in removing foreign bodies.

The safest rule, especially in the case of a child, is to send the patient to a surgeon.

If live insects get into the ear, first pour into the ear-canal a little sweet oil or glycerin, then gently syringe with warm water.

An ingenious method which is sometimes successful, is to turn the ear at once towards a strong light and a living insect may come out of itself.

FOREIGN BODIES IN THE THROAT.—Summon a surgeon promptly. Send him information as to the character of the accident, so that he may bring the needed instruments, as it may be necessary to promptly open the throat to save life.

When there is no serious difficulty in breathing, delay all action until the surgeon arrives.

For lime in the eye see Burns and Scalds.

To help the act of coughing, it is a common practice to slap the person on the back while the patient's body is bent forward (face downward), and thus dislodge the bodies in the windpipe.

In children and others the expulsion may be facilitated by lifting the person up by the heels so that the head hangs downward, and then slapping him on the back while in this position.

The patient may be tied with bandages to a bench, and then have his feet elevated by lifting the end of the bench.

If the substance can be seen, the patient's mouth may be opened and two fingers pressed back to the throat so as to try to grasp it; even if the effort to grasp it be not successful, the act may produce vomiting, which may expel it.

RESCUE AND RESUSCITATION OF DROWNING PERSONS.

When a person is discovered to be drowning, call to him in a loud voice that he shall be saved, to prevent demoralization from fright.

The rescuer should undress as rapidly and completely as possible, even tearing the clothes from him that he may not be encumbered.

The rescuer should not touch the drowning person while violently struggling in the water, but take the first opportunity to seize him, by the hair if possible, throw him quickly on his back, the rescuer himself swimming on his back, and towing the body after him, resting the head on the chest, holding the head with one arm, that the other arm and legs may be free. This position may be maintained longer, and a body supported more easily till further aid from shore is received, than by breasting the waters in the usual position.

When the current sets from the land, as in sea bathing, it is better to adopt the position last described, and await aid, than to struggle against the current for shore, as this latter procedure often loses both the rescuer and the one he seeks to save, through ineffectual efforts resulting in exhaustion.

If a boat is available, the stern or bow are proper places to get bodies in a boat with the least danger of capsizing. The body once in the boat or ashore, should be placed with the head lower than the body, which may be done by placing the back on the seat of the boat or on a hillock of sand, with head extended and dropping backward, and the arms extended behind the head.

Always remove a person exposed to drowning from the water.

This usually results in emptying, by the mouth and nostrils, much of the water that is interfering with respiration, and may be supplemented by the movements of the Sylvester method (hereafter given) of inducing forced respiration.

FIG. 21.– Emptying the water from the lungs.

Inasmuch as many lives are lost incessantly by drowning, it is suggested that every person living in localities where such accidents are liable to occur, acquaint themselves with the following simple and effectual methods of restoration. A practical method of so doing will be for two or more persons to go through the movements, one acting as patient, the other as rescuer.

FIG. 22. Forcing water from throat and stomach.

Resuscitation.—First. Immediately loosen the clothing about the neck and chest, exposing them to the wind, except in very severe weather, and get the water out of the body. First try tickling in the throat by a straw or feather, or apply ammonia to the nose; a severe slap with the open hand upon the chest and soles of feet, if no immediate result, proceed as below.

Second.—Lay the body with its weight on the stomach across any convenient object, such as a keg, box, boat timber or your knees, in the open air with the head hanging down.

Fig. 23.—Restoring breathing by Sylvester Method—Expiration.

Open the mouth quickly, drawing the tongue forward with handkerchief or cloth to let the water escape. Keep the mouth clear of liquid.

To relieve the pressure on the stomach, roll the body gently from side to side and then back on the stomach. Do this several times to force the water from the stomach and throat.

Third.—Lay the body on the back, make a roll of coat or any garment, place it under the shoulders of patient, allowing the head to fall back. Then kneel at the head of the patient.

Fig. 24.—Restoring breathing by Sylvester Method—Inspiration.

Grasp the arms at the middle of the forearms, folded across the stomach, raise the arms over the head to a perpendicular position, drawing them backwards, straight, then forward overhead to the sides again, pressing the arms on the lower part of the ribs and side, so as to produce a bellows movement upon the lungs. Do this twelve or fifteen times a minute.

Smelling salts, camphor or ammonia may be be applied to the nostrils to excite breathing. The clothing should be removed, the body dried and the limbs rubbed briskly *upwards*.

Fourth.—On signs of life, or when breathing is restored, wrap in warm blankets or hot cloths. To encourage circulation, brandy or any spirits may be given, in small doses, with care to avoid strangulation, and brisk rubbing and warmth applied to the entire body.

DROWNED PERSONS, TO FIND.—Make a board raft, ten or fifteen feet square. Cut a round hole in the center, eight or ten inches in diameter. Lie down on the raft, with the face over the hole, having the head covered with a coat or shawl, to exclude the light. While in this position, it will be noticed that the rays of sunlight are concentrated directly under the raft, and that very small objects can be distinguished easily. The raft should then be slowly towed over the place where the drowning is supposed to have occured. The gases generated by decomposition will usually cause a body to rise to the surface within a week or ten days.

DROWNING, HOW TO KEEP FROM.—In the water, the human body weighs only a little more than a pound. One finger placed upon a stool, chair, small box, or a piece of board, will easily keep the head above the water, while the feet and other hand may be used as paddles to propel towards the shore. To keep, in this way from drowning, it is not required that one should know how to swim. In nine cases out of ten, the knowledge that to be able to sustain a pound of weight is all that is necessary to keep one's head above water, will serve better in emergencies than the greatest expertness as a swimmer. Persons apparently drowned should be treated according to rules given for producing artificial respiration.

RULES IN DROWNING.

Always pull the drowning persons out of the water.

Do not let them cling around your back or arms to endanger you.

Duck them under the water if necessary until they are unconscious, to loosen a dangerous hold upon you.

Loosen clothing.

Clear mouth and secure hold on tongue.

Clear air passages.

Start artificial respiration.

Apply warmth and friction; when conscious, give hot water, hot coffee or hot lemonade.

Don't be rough.

Don't forget that artificial breathing is of first importance.

Don't hurry the breathing movements; take four or five seconds for each.

Don't give up, keep at work for hours if necessary. Persons have been revived after three hours steady work.

SUFFOCATION.

By inhalation of poisonous gases, vapors, such as illuminating gas, charcoal vapor, gas in wells, sewer gas, coal gas, mine gas, etc.

Remove the patient to open air.

Send for a physician.

In rescuing avoid risks.

If in a room, open and close the door rapidly to fan and force air into it.

Break out windows.

Tie a rope around the waist of rescuer; cover his mouth and nose with a handkerchief wet with vinegar and water.

Get the patient to fresh air.

Dash cold water on his face and chest.

Use artificial respiration the same as in drowning.

Apply hot bottles to body; put mustard plasters to heart, soles of feet and wrists; when recovering, mild stimulants may be used.

HANGING.

Always cut or take down the body. To do this, support the body with one arm; with the loose hand cut the rope.

Treat the same as suffocation by gases.

Remove any constriction around the neck. Remove the clothing about the chest; throw cold water upon the face and body; if this fails perform artificial respiration the same as in drowning.

ACCIDENTS: HOW TO AVOID THEM.

Always look in the direction in which you are moving

Never leave a car, or other public vehicle, when it is in motion.

Never put your head or arms out of a vehicle, when it is in motion.

If a horse becomes unmanageable, or runs away with you, the chances of escaping injury are better if you remain in the carriage.

In thunder storms, keep away from trees and metallic substances.

Never play with fire-arms. Always keep them beyond the reach of children.

Avoid the fumes of burning charcoal; they are deadly when confined in a closed room.

Illuminating gas; be sure to turn it off. Never blow it out.

When very cold, move about quickly. If any part of the body is frozen, rub it with snow, and keep away from the fire.

Change wet clothing as soon as possible.

Carefully avoid exposure to night air, in malarial districts.

Avoid walking on a railroad track.

When awake, young children should never be permitted to remain alone.

Never touch gunpowder after dark.

Never light a fire with kerosene.

Do not take a light into or light a match in a cellar, mine, well, apartment, or any place where gas has escaped.

Fill and trim your oil lamps in the daytime. Never trim or fill a lighted lamp.

Call the attention of the person responsible, to anything that may cause an accident.

Keep matches in a closed tin box.

Have your horses rough-shod as soon as the ground freezes.

Eat only pure food, drink only pure liquids, think only pure thoughts.

If necessary to go into a deep well, first lower a burning candle. If the light is extinguished, the place is unsafe to enter. A few pounds of unslacked lime, thrown into the well, will quickly absorb the carbonic acid gas and purify the air.

Drugs and medicines should be secured in a chest, prepared especially for the purpose, and kept in a dry closet. Examine chest and contents frequently. See that all corks and stopples are in perfect condition, as volatile preparations lose their strength with exposure to air, while opium and any mixture containing it, grows stronger from the same cause. If labels become detached, detroy bottles and contents, rather than risk error in re-labelling. Use, for poisonous materials, boxes and bottles of some peculiar form, and mark the word Poison distinctly on the labels.

Familiarize yourself with the contents of this book, and keep it where it can be found in an emergency.

THE DRESSING OF WOUNDS

The greatest danger to wounds results from contamination with foreign substances, not always visible, but whose effects are far-reaching. Certain invisible irritating matters (so-called disease-germs) quickly find lodgment in the wound by transference from the air, the clothing, skin, in fact from anything that may come in contact with it. In consequence of such contamination blood-poisoning, gangrene, inflammation, fever, erysipelas, lock-jaw or tetanus, and a train of other complications, are liable to follow any wound. Even scratches and pricks, when not properly cared for, may result in inflammation and the formation of gatherings or abscesses, which will disable a person for a considerable time, or cause the loss of a limb, or even cost him his life.

The modern practice of surgery requires that the dressings to be applied to a wound shall not only look clean, but must actually be surgically clean (aseptic), and free from infection or surgical dirt. In the eyes of a skilled surgeon a piece of spotless linen is the same thing as a filthy rag. He does not judge by the looks but by his knowledge of the effects.

The discovery and full appreciation of these facts has led to the triumphant progress of modern surgery. The application of the principles has prevented untold suffering and saved millions of lives.

In order to place the beneficial and far-reaching effects of the modern methods of caring for wounds within the reach of every one who may have the misfortune to be wounded, Johnson & Johnson have devised a system of first aid, of which this Manual is the text-book.

The dressings to be used in this system may be found in what is known as Johnson's First Aid Cabinet.

The various dressings in this case are similar to those supplied by Johnson & Johnson to the U. S. Government for the use of the Army and Navy. Their timely application will mean the saving of many lives and limbs and the prevention of a great amount of suffering. The use of these simple appliances will also prevent the employment of wrong measures of relief. For the lack of knowledge, dirty rags, chewing gum, tobacco, cobwebs, dirty oils, stimulating liniments and spoiled salves are, by well-meaning persons, applied to wounds almost daily with the most disastrous results.

In the use of the dressings of this case, a surgically clean dressing of the best possible type is sure to be applied quickly; to leave a wound uncovered for minutes or hours is to permit infection by the air or by insects, and may mean the loss of a limb or the loss of a valuable life. The instructions given for the prompt use of the materials supplied in this case are scientifically correct and the method of first aid to the injured is based upon the highest principles of humanity. It is, therefore, only natural that this system should receive and has received the special endorsement of thousands of railroad, mining and factory surgeons, as well as those connected with fire, police and municipal departments.

Johnson & Johnson are known all over the world as makers of surgical dressings that fulfill every requirement of modern surgery. They are universally recognized as the pioneers and leaders in the making of surgical dressings. They have revolutionized the methods of manufacture and by their skill, enterprise and industry have made the application of surgical cleanliness—modern surgery—possible, not only in large hospital centers, but in the most out of the way places.

Johnson's First Aid Cabinet has been substituted for the Johnson's Accident Case, described in the former issues of this manual. Johnson's First Aid Cabinet is a black japanned metal case with strong hinges and fasteners, permanent hooks for securely hanging it to wall, and handles for convenient carrying. The Cabinet is 21 inches high, 13 inches wide and 3½ inches deep. All the contents are immediately exposed and conveniently withdrawn.

The contents are arranged in most convenient form for utility and speedy application.

Upwards of seven thousand Johnson's First Aid Cabinets are in use in manufacturing establishments. It has been adopted by several of our chief Railroad Systems as a shop first aid equipment. Boards of Education in many cities have placed this cabinet in the public schools and adopted Johnson's First Aid Manuel as a text book on first aid to the injured. It is recommended by physicians as equally adapted for household use; hung in the bathroom it can easily be combined into a medicine and first aid cabinet.

Johnson's First Aid Cabinet sells for $6.00, and if not obtainable through druggists, interested parties are invited to communicate direct with the makers.

The description of articles and contents in the following pages, while written to describe the original Johnson's Accident Case, will also apply to the articles contained in Johnson's First Aid Cabinet and their uses. In the First Aid Cabinet however, a few of the items noted as belonging to the "Case" have been omitted and a larger quantity of more useful material, such as bandages, are supplied in their stead.

CONTENTS OF JOHNSON'S FIRST AID CABINET

Two Johnson's First Aid for Wounds.
Two ounces Red Cross Absorbent Lint.
One capsule Iodoform Gauze.
Six packages Red Cross Absorbent Gauze, each containing one yard.
Three packages Red Cross Absorbent Cotton, each containing four ounces.
One Spool Johnson's "Z O" Adhesive Plaster, 1 inch wide.
Nine Red Cross Cotton Roller Bandages, 2 inches wide.
Nine Red Cross Cotton Roller Bandages, 2½ inches wide.
Nine Red Cross Linton Gauze Bandages, 2 inches wide.
Nine Red Cross Linton Gauze Bandages, 2½ inches wide.
One jar Carbolized Petrolatum.
One 12 oz. bottle of Camphenol Solution (Antiseptic Wash).
One 1 oz. bottle of Camphenol.
One Tourniquet.
Two packages Safety Pins.
One Johnson's First Aid Manual.
One pair Scissors.
One pair Tweezers.

Note.—The Red Cross Ligatures, Surgeons' Soap and Antiseptic Tablets described in the following pages are now omitted from Johnson's First Aid Cabinet and other material substituted.

DESCRIPTION AND USES OF JOHNSON'S FIRST AID CABINET.

Johnson's First Aid for Wounds. This packet is modeled after the famous "First Help for Wounds" packet used so successfully in recent wars, as well as by all of the first aid and humane societies throughout the world. (In the Cuban campaign 370,000 were supplied by order of the United States Government to the Army and Navy). Many thousand have been supplied to various important Railway lines.

"Johnson's First Aid for Wounds" is an improvement on the regular Army packet and is particularly adapted to times of peace and to factory injuries.

The contents of Johnson's First Aid for Wounds packet are as follows:—

One piece of Antiseptic Lintine (felted cotton); one piece of Bandage Gauze; one Triangular bandage, with illustrations showing mode of use; two safety pins.

The whole is wrapped in an impermeable covering; enclosed in a cardboard carton; sterilized and sealed.

In military campaigns, in mining, forestry and camping operations, one of these packets is carried in the pocket, or clothing, of each person.

The value of the dressings in this packet has been well established; and it has been shown that they can be applied by any person without the removal of the clothing, and without handling the wound, and that the dressing is just what is needed, viz.: an antiseptic sterilized dressing. In most instances the dressings found in this packet are sufficient for all purposes until the arrival of a surgeon.

The directions upon each packet apply particularly to open wounds, burns, scalds or injuries of a similar nature, and are:

"Do not touch the wounds with the hands.

"Cover the part injured with the strip of Lintine (felted cotton), and wrap with the ribbon bandage.

"Wrap the whole with the triangular bandage as shown in the illustrations on the same."

It is difficult to conceive of a wound or an injury which cannot be completely or properly dressed by the use of this packet. One, or at most two, packets are sufficient for the temporary dressing of a most extensive injury.

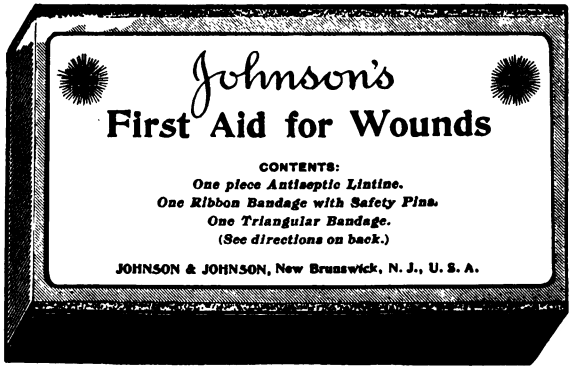


FIG. 26

The triangular bandage in this packet is the most convenient and the most useful bandage in the world, and is of especial value because of the facility and the rapidity with which its uses can be learned and the quickness with which it can be applied; at the same time, it makes the best temporary dressing that can be devised. The peculiarity of this bandage is that it adjusts itself to every condition and a little familiarity with its application affords sufficient knowledge of bandaging for any layman. Plain illustrations are printed on each bandage showng the principal methods of use, as specifically described under the section of bandaging in this Johnson's First Aid Manual which see.

Tourniquet.—This simple device is designed to stop the profuse flow of blood from severed arteries in accidents causing severe injuries to the limbs. It consists of a strong tape fastened to a wooden handle. The tape is to be wound once about the limb (between the heart and injury), and passed through the slit in handle. The handle is then twisted until sufficient pressure is applied to the artery to stop the blood spurt. The tourniquet should not be allowed to remain in place longer than is required to immediately obtain the service of a physician.

Camphenol Solution.—This is an efficient and safe antiseptic for wound cleansing, etc. A small bottle of Camphenol is supplied in the Cabinet; by placing one teaspoonful of Camphenol in the large empty bottle provided, and filling it with water, a solution of the proper strength is derived for washing wounds and making an antiseptic dressing. Full directions for uses accompany the Camphenol bottle.

SIX RED CROSS LINTON GAUZE ROLLER BANDAGES, each ten yards long and two inches wide.

SIX RED CROSS LINTON GAUZE ROLLER BANDAGES, each ten yards long and two and one-half inches wide.

FIG. 27

The gauze roller bandages are manufactured from special made cloth and prepared for surgical dressings. These bandages are very absorbent, soft, and at the same time firm and strong. They are intended to be used as a direct covering for the wound, where their absorbency is useful to hold and retain wound discharges. They are also useful in binding and holding other dressings and for the application of solutions, lotions, etc., to the wound. The gauze bandages as packed in this case are each wrapped separately, and have been thoroughly sterilized, and sealed. They can, therefore, be applied without danger of infection.

Where a stronger bandage is required or one for an outer covering, either the ribbon roller bandage or the triangular bandage should be applied. The widths here supplied are those most useful; for the fingers or toes, they may be split into narrow widths. For specific methods of application see "Bandaging."

EIGHTEEN RED CROSS COTTON ROLLER BANDAGES, assorted sizes, each five yards long.

These are ribbon-like strips of cotton cloth and gauze cloth, wound into a cylinder like tape.

They are strong and can therefore be used for binding up injuries in all parts of the body.

In general these bandages are used to keep other dressings in place, to secure splints; to cover wounds, to check bleeding, to protect the parts from external injury; binding up fractures—in fact their uses are innumerable and they may be said to be applicable to nearly every sort of injury.

FIG. 28

The size of cotton roller bandages included in this case are suitable for any part of the body; the smaller sizes being used for the fingers, and the larger sizes for the arm, leg, chest or head.

Persons of very ordinary intelligence can satisfactorily apply a roller bandage.

Methods of application adapted to ordinary emergencies are described under heading of "Bandaging" in this manual.

RED CROSS GAUZE PLAIN.—Johnson's Accident Case contains three packages of this gauze.

The material, as its name indicates, is a thin, soft, woven cloth. That which is put up in these packages is made of a specially spun and woven fibre, which is made absorbent and specially treated for surgical uses.

For the purpose of covering a wound directly under most conditions this Red Cross gauze is a very proper material to use. It is surgically clean (aseptic),

absorbs very readily, contains no foreign matter, is soft, soothing and will form an easy, comfortable pressure and absorb all discharges and exudations.

Each one of these packages contains one square yard of surgical gauze, and this is used either in entirety or it may be cut into suitable sizes or folded for making compresses; for covering large exposed surfaces; for applying dressings or solutions to burns or wounds; in fact, can be adjusted to innumerable conditions and circumstances.

In applying a gauze dressing it is always well to fold the gauze in such a way that there will be a considerable number of layers or mass of gauze over the wounded part. For a small wound the Red Cross gauze should be folded so as to form a pad one-eighth of an inch thick; this will require about twenty-five layers of gauze-cloth. For a large wound an increase in the number of layers should be made in proportion; one or two hundred layers to be used for extra size wounds, such as a crushed or torn limb, extensive cuts, etc. After applying the gauze, a roller bandage or the triangular bandage should be used to hold it in place.

FIG. 29

Where there is considerable oozing of blood, layers of absorbent cotton for considerable depth on top of the gauze pad should be made before applying the outer bandage.

RED CROSS IODOFORM GAUZE.—This, as its name implies, is sterilized absorbent gauze, impregnated with one of the most useful of all antiseptics, viz: iodoform. The iodoform used is guaranteed to be free from all adulterations and from disease germs. The Red Cross Iodoform Gauze has been used since the first inception of antiseptic surgery, and its superiority to other brands universally acknowledged. It is applied by the surgeon as a direct covering for the wounded part. It is especially valuable in bites, stings, burns, bruises, open or closed wounds, either clean or foul or infected. It also forms a very useful drainage material; being a local anæsthetic, it is to some extent useful in relieving pain.

FIG. 30

Particular uses for iodoform gauze are given under the sections relating to "Wounds," "Burns," "Fractures," etc., which see.

RED CROSS ABSORBENT COTTON.—Johnson's Accident Case contains four packets (four ounces in each packet) of sterilized absorbent cotton.

The Red Cross Absorbent Cotton is known to surgeons as one which is absolutely pure; that is to say—it is chemically pure and free from all foreign material. It is carefully cleansed and disinfected and subsequently sterilized within the package, and is therefore surgically clean. The cotton is rolled into layers or sheets with tissue paper between each layer, and can therefore be cut or torn into any required shape.

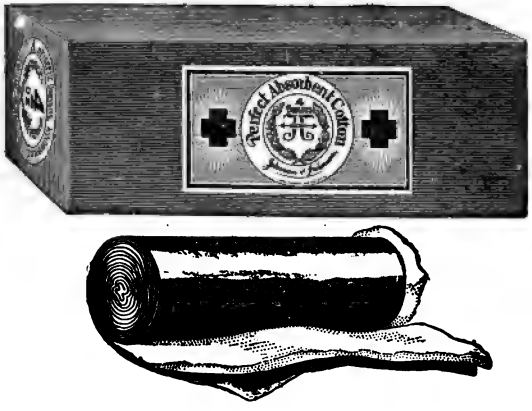


FIG. 31

It is scarcely necessary here to dwell upon the wide range of absorbent cotton as an application to injuries of any sort. It is by far the most universally used of all material either for covering wounds, for making compresses, for padding splints, slings, or for absorbing discharges, and is adaptable to every conceivable use.

Several forms of dressing, in which absorbent cotton forms a component part, are given elsewhere in this Manual, a typical dressing for an open wound is as follows: Next to the wound place layers of Red Cross Gauze (plain gauze) for a clean wound (iodoform gauze if the wound is infected); above this place, according to the amount of discharge or oozing expected, layers of Red Cross Absorbent Cotton, bind with a roller cotton bandage or the triangular bandage.

RED CROSS LIGATURES.—Johnson's Accident Case contains six packages of Red Cross Ligatures (three catgut, three silk).

FIG. 32

These are for the use of surgeons for sewing or stitching the edges of wounds together; for tying arteries, etc., the assortment of sizes being adapted to every emergency.

The Red Cross Ligatures are well known to the surgical profession as being absolutely reliable, perfectly aseptic, and their original form of packing admits of their being handled and used without danger of contamination. The ligatures packed in this case are especially prepared for the purpose, each ligature being accompanied with a needle properly threaded and ready for use. The advantages of a surgically clean needle, surgically clean ligature, in this convenient form, will be apparent to every surgeon.

No one but a surgeon (or a person who has been especially instructed by a surgeon) should attempt to stitch a wound with ligatures.

Their application requires a technical knowledge of the tissues involved as well as mechanical skill for a successful application. A layman can do much better with bandages.

ANTISEPTIC TABLETS.—In the box containing Red Cross Ligatures is a bottle of antiseptic tablets. These tablets are intended solely for the use of the surgeon.

The tablets are made after the formulas suggested by Dr. Bernays and Dr. Laplace (citric acid and mercuric chloride) and are used for the preparation of antiseptic solutions.

One tablet dissolved in four ounces of water makes a solution of a strength of one to one thousand of bichloride of mercury. Soft water should be used in making these solutions. The solutions should be made in glass, earthen or stoneware vessels (metal vessels should never be used).

These tablets and the solutions made from them are highly poisonous and should be used with caution. Any solution remaining over after use should be thrown away.

SURGEONS SOAP—In the modern method of treatment of wounds, it is absolutely essential that the wound itself, the hands of every person who shall touch the same, as well as anything applied to the wound, shall be surgically clean.

FIG. 33

Surgical cleanliness is cleanliness that cannot be attained by ordinary washing nor by the use of ordinary soap. In Johnson's Accident Case will be found a cake of Surgeons Soap. This is a true antiseptic soap, manufactured and sold for surgical purposes Many suggestions for its use will be found throughout the pages of this Manual. It should always be used for washing the hands of the person who is to handle a wound, for the cleansing of an instrument or appliance which is to come in contact with the wound.

DRESSINGS.—Emergency dressings can be easily prepared by boiling cloths, lint, or other suitable fabrics in a strong suds made of Surgeons Soap. One-fourth cake of this soap dissolved in two pints of water forms an antiseptic solution, into which bandages, lint, gauze, cotton, etc., may be dipped and wrung out to form antiseptic dressings in emergency cases.

Suds made of Surgeons Soap and boiled water may be used for cleansing foul wounds, where such a course is necessary, before the arrival of the surgeon.

Forceps, knives, scissors and instruments which are to come in contact with a wound, should first be boiled for five minutes in a solution of Surgeons Soap.

This soap is also useful for washing ulcers or old sores; it also serves an excellent purpose for bathing patients under treatment for infectious diseases, and baths for attendants, for the effectual disinfection of both person and clothing.

RED CROSS ABSORBENT LINT—The Johnson's Accident Case contains two one ounce packages of this material. Lint cloth is a thick absorbent cloth with a nap on one side, (resembling canton flannel). Formerly lint cloth was prepared in the household by scraping old soft linen or muslin cloths. The Red Cross Lint is specially prepared for surgical purposes. It is used mainly for the application of solutions, ointments, vaseline, carron oil to injured surfaces, such as burns, scalds, etc., also for compresses, pads, etc. Modern surgeons now substituute for lint, absorbent cotton or gauze cloth, and this course is probably the better one.

FIG. 38

Z. O. ADHESIVE PLASTER, one roll.—This plaster is an improvement on the so called surgeons' adhesive plaster, or, as it is sometimes termed, rubber adhesive plaster.

The Z. O. Adhesive Plaster found in Johnson's Accident Case is known to the surgical profession as the most perfect adhesive plaster in the market. It is applied without the aid of heat or moisture, it is very strong and very adhesive. It is supplied in a ribbon, compactly wound on a spool.

The uses of adhesive plaster are too numerous and common-place to mention. Some of its important applications in emergencies have been detailed in the preceding pages of this Manual. When the services of a surgeon can be secured and in the case of extensive injuries, a layman should never attempt to apply adhesive plaster to a wounded surface.

In trifling injuries, or in cases where the patient will not reach a surgeon for some days, adhesive plaster may be used by others than a surgeon.

In applying adhesive plaster to a broken surface, the wound itself and the surrounding parts should be cleaned with the Surgeons Soap and made thoroughly dry with Red Cross Gauze. (The hands of the operator should be made clean by the methods detailed under wounds.)

The wound should never be entirely covered with adhesive plaster. The best method is to bring the surfaces together with narrow strips, leaving a space between each strip for the wound to discharge.

No large, open or raw surface should be covered with adhesive plaster, it should never be applied to burns.

Adhesive plaster is very useful for holding dressings in place when the patient is to be transported. It can be made to form a covering and protection for wound surfaces; for closing of torn or cut wounds. In small injuries it is often the only application needed. Some of the more common applications for adhesive plaster are shown in the illustrations.

ADHESIVE PLASTER

What is known as Rubber Adhesive Plaster, or as it is sometimes termed, Surgeon's Adhesive, should be used instead of court or isinglass plaster as an application to wounds. Rubber Adhesive plaster is used by surgeons to fasten together the edges of wounds. It sticks by itself without warming or other preparation. The uses of Adhesive Plaster are too numerous and commonplace to mention.

When the services of a surgeon can be secured aid in case of extensive injuries, a layman should never attempt to apply adhesive plaster to a wounded surface. Only in trifling injuries or in cases where the patient will not reach a surgeon for some days should adhesive plaster be used by any person except a surgeon.

FIG. 35

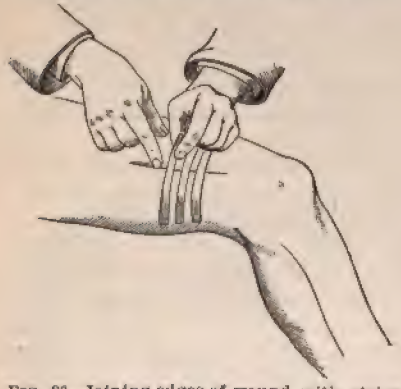


FIG. 36—Joining edges of wound with strips of Adhesive Plaster.

FIG. 37—Removal of Adhesive Plaster—Dampen with alcohol and pull ends toward wound.

FIG. 38—Adhesive Plaster for wounds in face.

The Surgeons' Adhesive Plaster sold under the name of "Z O" Adhesive Plaster is known to the surgical profession as the most perfect adhesive plaster in the market. It is applied without the aid of heat or moisture. It is non-irritating and will keep in any climate. It is supplied in various forms and sizes such as yard rolls and ribbon form, in widths varying from ¼ to 4 inches.

FIG. 39
Adhesive Plaster in Cylinders

Adhesive Plaster for wounds in hand.

A very convenient form of adhesive plaster for lay use and for travelling is the kind known as Zonas Cylinders and "Z O" Pocket Adhesive Plaster.

HOUSEHOLD ACCIDENT CASE—FIRE KIT

HOUSEHOLD ACCIDENT CASE.

For household uses, Johnson & Johnson have prepared a case that contains a quantity of dressings that are just what are needed to care for wounds and hurts from accidents liable to occur in any household, such as cuts, bruises, scalds, spasms, colic, etc., or to make the patient comfortable as possible until the physician arrives.

Each article or bandage is wrapped separately and sterilized. Every piece of dressing in the case is antiseptic, surgically clean; no other dressing should ever be applied to a wound.

Every article in this Household Accident Case is so simple that any intelligent person can apply them, and there is sufficient material to last a long time for household purposes.

The Household Accident Case contains: 2 Ounces Red Cross Absorbent Cotton, in 1 ounce packages; 1 Tube Carbolized Vaseline; 1 Yard Red Cross Plain Gauze; 1 Ounce Lint; 4 Cotton Bandages, 2 inch; 2 Wood's Bandages, 2 inch; 3 Mustard Leaves; 1 Packet Zonas Adhesive Plaster, 1 inch; 1 First Aid for Wounds; 1 Package of Safety Pins and 1 Hand Book of First Aid.

RED CROSS EMERGENCY FIRE KIT

The Red Cross Emergency Fire Kit is a compact, strongly and neatly made case, covered with black cloth, measuring 7½ x 9 inches, is little less than 3 inches deep, fastens with a nickel catch and hinged.

The Kit contains material necessary for dressing injuries likely to result from fires, and the articles contained are so arranged in slot or compartment, that any dressing may be taken from the case without disturbing the rest; in other words —every article is on top.

The Kit was originally made up for the use of surgeons, but with the aid of Johnson & Johnson's Hand Book of First Aid contained therein, any intelligent person can apply the proper dressing; in fact, there is nothing in the kit that could possibly harm any sort of a wound, while the timely application will in many cases save life and limb.

Contents:—2 Red Cross Plain Gauze Bandages, 2 inch; 2 Red Cross Plain Gauze Bandages, 2½ inch; 1 Johnson's First Aid to Wounds; 1 Box "Z O" Adhesive Plaster, 1½ inch; 1 Red Cross Catgut Ligature, No. 2, with needle threaded; 1 Red Cross Silk Ligature, No. 2, with needle threaded; 2 ounces Red Cross Absorbent Cotton, in 1 ounce packages; 2 yards Red Cross Corrosive Sublimate Gauze, 1-2000, in 1 yard packages; 1 Pair Forceps; 1 Pair Sissors; 1 package of Safety Pins and 1 Hand Book of First Aid.

The Emergency Case came duly to hand, and our master mechanic, Mr. J. E. Irwin, states it is the most complete outfit he ever saw, and is highly pleased with the same. I wish to extend my hearty thanks, and will see that J. & J. goods are used on the line of M. C. & C.

H. A. CLARE, General Manager, Marietta, Ohio.

Please accept our thanks for the Johnson First Aid Manual that you have just sent us. We consider it invaluable in connection with the Johnson Accident Case.

KEUFFEL & ESSER CO., Hoboken, N. J.

We have just received from Langley & Michaels Co. one of Johnson's Accident Cases, and find same very complete, and we think an article that should be in every manufacturing concern. Very truly yours,

MESSE & GOTTFRIED CO., San Francisco, Cal.

BANDAGING.

ESMARCH'S TRIANGULAR BANDAGE (Fig. 46) may be applied to any part of the body. It is made by cutting a piece of linen or calico forty inches square into two pieces crosswise. The bandage may be used either as a "broad" or "narrow" bandage.

The broad is made by spreading the bandage out, then bringing the point down to the lower border, and then folding into two folds.

The narrow is made by drawing the point down to the lower border, and then folding into three. (See Fig. 48)

The bandage should always be fastened either by a pin or by being tied with a reef-knot. (Fig. 47). It is applied to the body as follows:

FIG. 46—Esmarch's Triangular Bandage.

To the Scalp. (Figs. 53 and 54) Fold a hem about two inches deep along the lower border; place the bandage on the head so that the hem lies on the forehead and the point hangs down at the back; then carry the two ends round the head above the ears cross them at the back, and bring them forward and tie on the forehead; then draw the point downwards, and turn it up and pin it on the top of the head.

FIG. 47—Reef Knot.

In applying this bandage care must be taken to put the hem close down to the eyebrows, not to carry the ends above the ears, and to tie the ends close down to the eyebrows, and not high up on the forehead.

For the forehead, side of head, eye, cheek, for any part of the body which is round, (as the arm or thigh, etc.,) the narrow bandage must be used, its center being placed on the wound, and the ends being carried round the limb and tied.

For the eyes or front of the face the narrow bandage is folded about the head at the middle line of the face with the ends tied in a reef knot.

Neck.—Use the narrow or broad bandage as may be required, tying on the side opposite the injury. (See Figs. 55 and 56.)

For Shoulder.—(Figs. 69, 70 and 71 B C) Place the center of a bandage on the injured shoulder, with the point running up the side of the neck; carry the ends round the middle of the arm and tie them; take a second bandage, fold it into a broad bandage, place one end over the point of the first bandage, sling the arm by carrying the other end of the bandage over the sound shoulder, and tying at the side of the neck; bring the point of the first bandage under the part of the sling resting on the injured shoulder, draw it tight, turn it down and pin it.

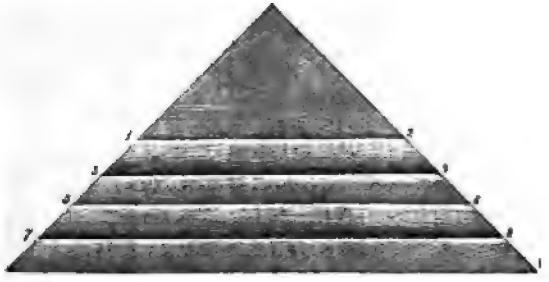


FIG. 48. Points at which to fold Triangular Bandage. For narrow bandage fold at 1 and 2, 3 and 4, 7 and 8. For broad bandage fold at 1 and 2, 5 and 6.

For Chest. (Figs. 68, 69 and 70) Place the middle of the bandage on the injured side, with the point over the shoulder; carry the two ends around the waist and tie them; then draw the point over the shoulder and tie to one of the ends.

For the Back.—The bandage is applied as above, but beginning by placing on the back.

In injury to the ribs it is best to use two bandages, apply one well under the armpits and the other one directly below, tying each one at a point opposite the injury.

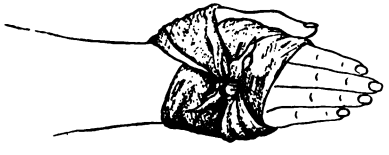


FIG. 49. Triangular Bandage for the hand

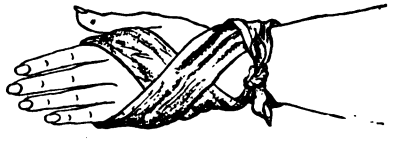


FIG. 50. Triangular Bandage in form of figure 8 for the hands.

In injuries of the upper arm use the broad bandage as shown in figure 71 D, supporting the arm in a sling.

In injuries of the elbow bind the bandage in the same manner as in the upper arm. (Fig. 69).

For the Forearm and Wrist.—Bind with a broad cravat as in the upper arm, and support the arm in a sling. (Fig. 67.)

Hand.—If only the back of the hand be injured, the figure of eight bandage, as shown in figure 50, may be applied and the hand supported in a large arm sling.

If the palm be injured the form of applying should be reversed.

To cover the whole hand the triangular bandage is spread out and the hand laid upon it with the wrist at the lower border and the fingers toward the point. The point is carried back towards the fingers; the ends brought about the wrists, crossed, brought back and tied. (Fig. 71 E).

This makes a very effectual and complete bandage for the whole hand and a support for all the fingers.

Large Arm-Sling. (Figs. 59 and 60.) Spread out a bandage, put one end over the sound shoulder, let the other hang down in front of the chest; carry the point behind the elbow of the injured arm, and bend the arm forward over the middle of the bandage; then carry the second end over the shoulder of the injured side, and tie to the other end; bring the point forward, and pin to the front of the bandage.

Small Arm-Sling.—Fold the bandage into the broad bandage; then place one end over the shoulder on the sound side; cross the arm over the middle of the bandage hanging down the chest; then bring the other end over the injured shoulder and tie at the side of the neck. (See Fig. 61.)

For Hip. (Fig. 67, 69) Tie a narrow bandage round the body above the haunch-bones, tying the knot on the same side as the injury; take another bandage, turn up a hem according to the size of the patient, place its center on the wound, carry the ends round the thigh, and tie them; then carry the point up under the waist-band, turn it down over the knot, and pin it.

For the Foot. (Fig. 65, 66.) Spread out a bandage, place the foot on its center with the toe towards the point, draw up the point over the instep, bring the two ends forward, cross, and tie them either on the sole (if to keep a splint on) or round the ankle.

For the thigh, knee and leg the cravat bandage is used as shown in the illustrations. (See Fig. 68, 69 and 71 I.)

FIRST AID BANDAGING.

The triangular bandage has proven of the greatest value in emergencies, upon the field of battle and elsewhere. It is simple, efficient and of wide applicability. It is probable that no other system of wound dressing is able to accomplish so much, and in such a reliable manner, in rendering first aid, as the use of this triangular bandage in connection with the contents of Johnson's First Aid Packet.

In any ordinary wound the best possible procedure is to at once lay upon the wound the felted cotton contained in this packet; over this lay the gauze bandage and wrap the whole with the triangular bandage, as shown in the illustrations.

The triangular bandage, as found in Johnson's First Aid Packet, is printed with the illustrations shown in Figs. 67, 68, 69 and 70 of this Manual, and it is earnestly recommended that every user of this Manual and the Johnson's Packet shall obtain one of these illustrated triangular bandages and familiarize himself with its use. This can best be done by an actual and practical application. One of the bandages in the accident case may be used for the purpose of practice, or a bandage may be purchased of the manufacturers.

The triangular bandage is susceptible of many applications not shown in this Manual, or even upon the illustrations. These will suggest themselves to the user.

FIG. 51—Triangular Bandage for the chin.

FIG. 52—Triangular Bandage for the top of the head.

FIG. 53—Triangular Bandage applied to scalp, first operation.

FIG. 54—Triangular Bandage applied to scalp.

FIG. 55—Triangular Bandage for the throat.

FIG. 56—Triangular Bandage for the back of the neck.

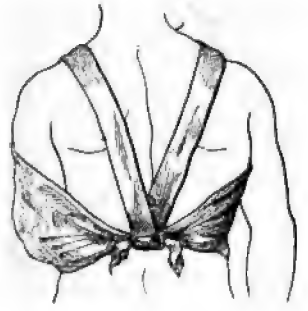


FIG. 57—Triangular Bandage, fracture of upper arm, back view.

FIG. 58—Triangular Bandage, fracture of upper arm, front view.

FIG. 59—Triangular Bandage, broad-sling, right arm.

FIG. 60—Triangular Bandage broad-sling, left arm.

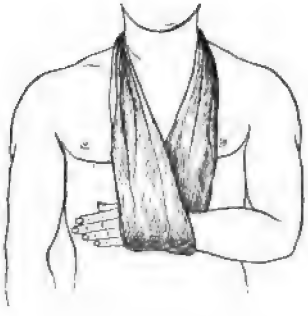


FIG. 61—Narrow-arm sling—Triangular Bandage.

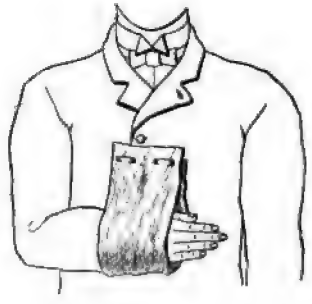


FIG. 62—Sling made from piece of cloth.

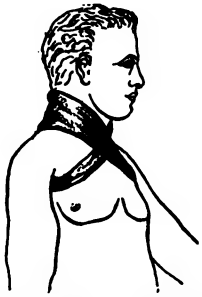


FIG. 63—Triangular Bandage for back of the neck.

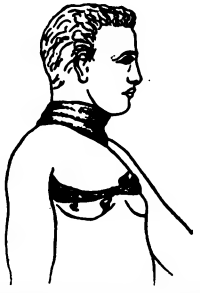


FIG. 64—Triangular Band. ge for the throat.

FIG. 65. Triangular Bandage for the foot.

FIG. 66—Triangular Bandage for the heel.

FIG. 67—Triangular Bandage, 1, 2, Splints; 15 Heel; 31 Hip; 4 Arm Sling; 16 Chin; 2 Splint to Forearm; 4 Broad Sling; 24 Narrow Sling; 9 Scalp.

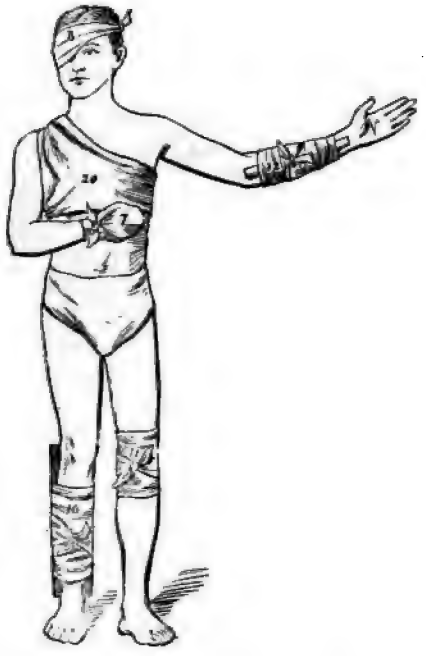


FIG. 68—Triangular Bandage, 7 Hand; 12 and 16 Splints; 20 Chest; 8 Eye; 11 Knee Bandage.

FIG. 69—Triangular Bandage, 21 Scalp; 19 Chest; 32 Shoulder; 3 Hand; 31 Hip; 23 Heel; 6 Thigh.

FIG. 70—Triangular Bandage, 12 and 16 Splint in fracture of leg; 29 Throat Bandage; 18 and 23 Arm; 3 Chest; 22 Forehead.

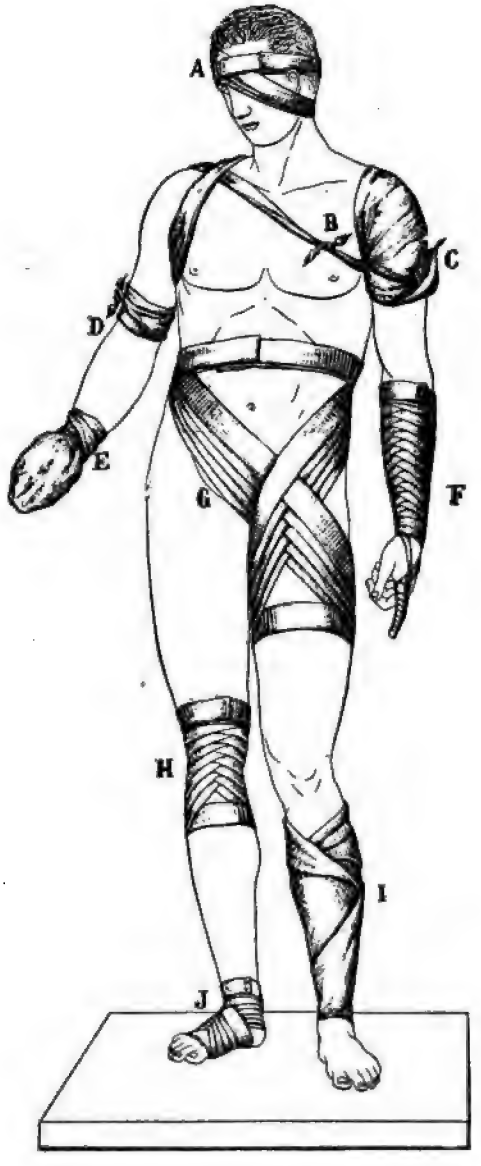


FIG. 71—Roller Bandages—A eye; F finger, wrist and forearm; G groin; H knee cap; J foot and ankle. Triangular Bandage—B C shoulder; D upper arm; E hand; I leg.

ROLLER BANDAGE.—The roller bandage is easily applied, and while experience is necessary, with a little practice any layman may make an application that will answer in any emergency.

FIG. 72.—Method of handling Roller Bandage.

It is suggested that those who have charge of the use of the Johnson's Accident Case familiarize themselves with this subject by taking one of the roller bandages from the case and applying the same to a model, following the illustrations. After a few such applications sufficient knowledge will be acquired to stand in good stead on some important occasion.

No particular definitions or instructions can take the place of the illustrations given in the following pages, particularly if the user will undertake for himself to apply the forms of bandages therein figured.

To apply a roller bandage, begin by holding the extremity at the point at which it is to start with the thumb and index finger of the left hand; hold the roll of bandage in the right hand and turn this hand in the direction taken by the hands of a clock, unrolling the bandage and turning it around the part to be enclosed at the same time. Make the first turn with the right hand, after which the left hand, being freed by the overlapping, may alternate with it.

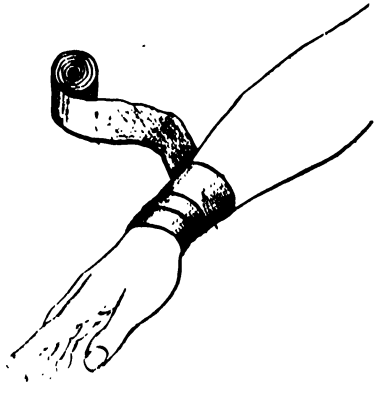


FIG. 73.—Method of applying Roller Bandage spirally.

FIG. 74.—Method of reversing or folding back turns of the spiral Roller Bandage.

The simplest form of application of a roller bandage is a direct circular turn around the part beginning at the end of the limb or part. Where the part is larger at one end than the other, for example, the forearm from the wrist to the elbow, circular turns would not lie smoothly. In such case begin at the small end, making a few turns each over the other, and then move the turns up the limb spirally, making the spirals overlap each other about one-third their width.

When the bandage begins to pucker, turn the edge so as to make an inverted V and carry around the part overlapping the preceding turn, and so on repeating the process until the whole part is covered. (See Figs. 73 and 74).

At joints—elbow, knee. ankle—roller bandage may be applied, so as to form a figure 8, the bend of the joint forms the crossing part or middle of such a figure 8, with loops above and below the joint.

In applying a roller bandage care must be used as to the amount of tension to be employed. The surgeons use the expressions "tight," "moderately tight" and "loose." These grades may be estimated by applying a bandage upon one's own person. A tight bandage around the hand would cause it to throb; a moderately tight bandage around the fingers would give the support of a comfortable fitting glove; a loose bandage is such that may be applied to the eye without discomfort. As a general rule, bandages around the fleshy part of the arm and thigh will allow more force than other parts of the body. In applying a bandage to the entire limb a slight increase of pressure may be applied at each turn of the bandage from the beginning. When the roller bandage is used to hold

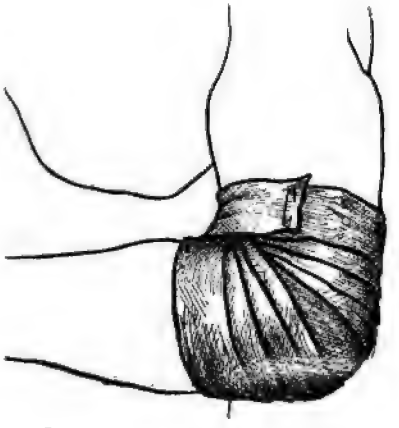


FIG. 75—Roller Bandage for elbow joint begin bandaging at forearm.

FIG. 76—Bandage for forearm begin bandaging at point nearest the shoulder.

FIG. 77—Figure-of-Eight Bandage for wrist and forearm begin bandaging at point nearest elbow.

splints in place, more pressure may be used than if applied directly to the limb itself. If the hand or foot, the fingers or toes are left uncovered while the rest of the member is tightly bandaged, swelling is very liable to occur with disastrous results. Bandages applied over thick layers of gauze or cotton can be made tighter than where no other dressing is employed. It should also be noted that a limb bandaged when elevated, will, when lowered or extended, distend and increase the pressure, or when a bandage should be started at the ankle and pass on to the extremity of the foot and then return to the ankle, the first winding should be very loose. Allowance should also be made in bandaging for any shrinkage which may occur by the wetting of the bandage, such as discharge from wounds, bleeding, etc.

Aged persons and children require moderate pressure. In applying bandages to the chest, breathing should not be interfered with.

To secure the end of a roller bandage, a pin or strips of adhesive plaster may be used; the end may be slit into tails which are carried around the part in opposite directions and tied. If a pin is used, it should always be directed downwards and appear to view at least twice through the layers of muslin, its point buried.

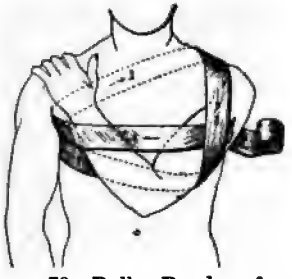


FIG. 78—Roller Bandage for fracture of shoulder, first steps.

Roller Bandage for fracture of shoulder, finished bandage.

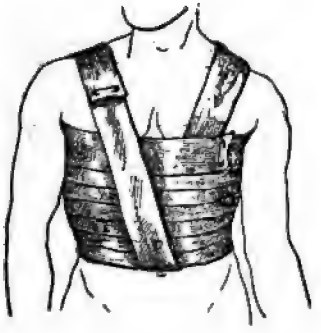


FIG. 80—Roller Bandage for fracture of ribs or wounds of the abdomen.

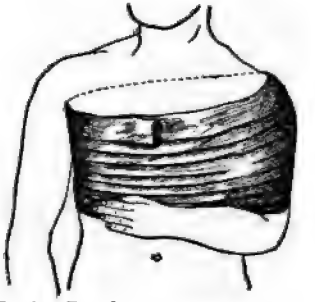


FIG. 81—Roller Bandage for wounds of shoulder, armpit or axilla.

SIZES OF BANDAGES

Roller Bandages vary in width and length according to the use for which they may be desired.

The following sizes are those most frequently used:

Bandages for hand, fingers and toes—One inch wide, one to two yards in length.

Bandages for the head, arms and legs of children—One and one-half or two inches wide, six yards in length.

Bandages for arms, legs and extremities of adults—Two and one-half inches wide, seven yards in length.

Bandages for thigh, groin and trunk—Three inches wide, eight to ten yards in length.

FIG. 82—Roller Bandage for head and jaw.

FIG. 83—Sling for injuries of chin.

FIG. 84—Roller Bandage for the toe, begins at foot.

FIG. 85—Figure-of-eight Roller Bandage for thumb, begins at the wrist.

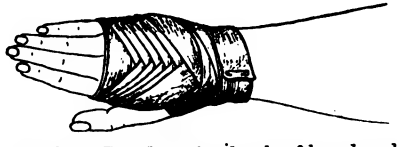


FIG. 86.—Bandage for back of hand and wrist, begins at back of wrist.

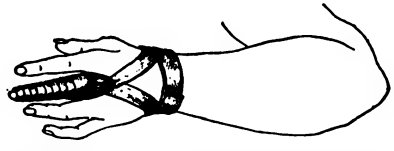


FIG. 87—Roller Spiral Bandage for one finger, begins at the wrist.

FIG. 88—Spiral Bandage for fingers and hand, begin at fingers, bandage fingers first.

FIG. 89—Spiral Bandage of all the fingers, useful in fracture or dislocation, burns or wounds, begins at the wrist.

TRANSPORTATION OF WOUNDED.

Where the patient has been rendered unable to walk alone he may be carried by the bystanders making either the two or four-handed seats.

The four-handed seat is made by two persons clasping each other's wrists as shown in Fig. 90.

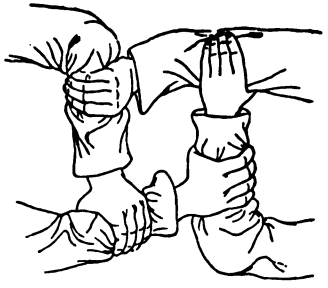


FIG. 90—Four-Handed Seat.

After the hands are clasped together, the bearers stoop down behind the patient, who sits on the hands, and at the same time places one arm around the neck of each bearer.

The two-handed seat is made by two bearers clasping their hands and placing their free hands on each other's shoulders.

In case of the patient being a short person, the bearers should place their hands on each other's hips instead of on the shoulders.

This kind of seat may be used to lift a helpless patient from a chair to the bed.

A bearer stands on each side of the patient, and passes one arm under his knees and clasps the hand of the other bearer. The bearers then pass their arms round the back of the patient and grasp each other's shoulder.

One bearer may carry a patient by the ordinary "pick-a-back" method, or as follows:

The bearer stoops down in front of the patient and passes his right arm between the patient's legs, who then falls across the bearer's back, so that his right arm comes in front of the bearer's left arm. The patient is kept from falling by the bearer holding his right leg and right arm.

The plan of carrying the patient by the arms and legs with the face downwards commonly called "frog's march" must never be used, as death may ensue from this treatment.

Where a proper stretcher cannot be obtained, a temporary one may be made.

The sleeves of a coat may be turned inside; two stout poles are then passed through them and the coat buttoned.

The patient sits on this, and rests against the back of the first bearer.

If a longer stretcher be required, two coats must be treated in the same way.

Two sacks may be taken; a hole is made in each corner of the bottom, and two poles passed through the sack and out of the holes.

FIG. 91—Stretcher for use in Mines.

FIG. 92—Harness for Carrying up and down Ladder.

A broad board or shutter may be employed as a stretcher; but if either of them be used, some straw, hay, or clothing should be placed on it, and then a piece of stout cloth or sacking; the sacking is useful in taking the patient off the stretcher when he arrives at the bed-side.

Always test a stretcher before placing the patient on it. Place an uninjured bystander upon it and let the bearers carry him a short distance, practicing placing him upon it, laying down, raising up, turning around, etc.

Never allow stretchers to be carried on the bearers' shoulders.

Always carry patient feet foremost, except when going up a hill. In cases of fractured thigh or fractured leg, if the patient has to be carried down hill, carry the stretcher head first.

In carrying a patient on a stretcher, care should be taken to avoid lifting the stretcher over walls, hedges, or ditches.

The following method of carrying a patient by a single bearer is that suggested by Dr. Henry W. Moore, Major and Surgeon O. N. G.

"The bearer drops to his left knee, having his right thigh horizontal, the leg making an angle somewhat less than a right angle with the thigh, and seats the person on his thigh. The patient's left arm is around the bearer's neck, his right hand on the bearer's left shoulder. The bearer's right arm is around the patient's waist, and his left forearm under the patient's knees. The bearer is now careful to have his back vertical, rises, using the great muscles on the front of his thighs. The back is not to be used in lifting at all, and if the vertical position is maintained, it will not be. Reversing this position may be advisable on account of the location of injuries or disabilities or to accommodate a left handed bearer."

When necessary for a single bearer to carry an injured person up, or down a ladder (as in a mine) the simple method devised by Dr. E. Hamilton Fish, of Ouray, Colorado, may be used. (See Fig. 92). It is as follows:

FIG. 93—Blanket Litter.

The apparatus is a harness consisting of a broad chest band about six or eight inches wide, buckling in front by three or four straps. To this is firmly riveted two shoulder straps two and one-half inches in width, leaving a sufficiently large arm hole. Two inches from the top of the chest band and to the left side is riveted a two inch band to surround the patient, catching a ring upon the right side of the band by means of a snapper.

On the left side, and about the center of the band, is riveted a sling four to six inches in width and about three feet six inches long, the free end being supplied with a heavy snapper, which is snapped into a ring upon the right side of the chest band. Two small thigh snaps are fastened to the sling firmly supporting the patient upon the sling seat. This harness is made entirely of heavy leather and steel fastenings. The bearer applies the chest band as one would put on a vest, the band and sling hanging free. The patient then faces the bearer's back with the arms placed about his neck or waist. The sling is then passed behind the patient's thighs, the thigh straps buckled, and snapped to the ring on the right side of the chest band. He then assumes a sitting posture, the sling supporting his weight. The legs should be separated to admit those of the bearer between. The band is then passed behind the patient's back and snapped into the sling ring preventing his falling backward. This harness relieves the strain from the patient and enables the bearer to sustain the weight from the shoulders.

BLANKET LITTER.—In addition to the methods suggested above for transportation of injured persons, a blanket litter devised by Acting Assistant Surgeon, C. E. McDonald, commends itself by its simplicity, as it can be improvised under almost any circumstances.

The method requires the service of two bearers and the use of two blankets. Each blanket is folded, rolled or twisted into a cylindrical form, as shown in Fig. 94. The two cylinders are placed side by side and their ends are tied together by reef knots. The bearers then raise the tied blanket rolls, adjusting them with one knot on the right shoulder of the right bearer, and the other on the left

FIG. 94.

shoulder of the left bearer, as shown in Fig. 93. To transport the patient the bearers kneel, the right bearer on his left knee, the left bearer on his right knee; the cylinder is pulled apart so as to form a sitting space of six or eight inches between the rolls, and the patient, supported by the arms of the bearers, is placed upon this space for transportation. By this method one arm of each bearer is free for any emergency.

PREPARATION FOR RECEPTION OF ACCIDENT CASES.

Where the patient is to be removed to a private house instead of a hospital, preparations should be made as far as possible before the injured person is brought in. Such preparations will vary according to the nature and extent of the injury, but the following hints will be of value:

A room should be chosen which can be easily reached, as it is difficult to carry an injured person through narrow passages and up stairs.

The way to the room must be cleared of furniture and all loose mats in the hall or lobbies. If the injured person is carried on a stretcher, a couple of strong kitchen chairs should be placed ready to support it, wherever the bearers would be likely to require rest.

Useless furniture should be removed from the bed-room. The bed should be drawn out from the wall so that both sides can be approached, and the clothes turned back to one side to their full length. A hot water bottle should be ready. If there is much collapse, several such bottles and hot blankets may be may be required; cover the hot bottles with flannel.

If the injury is very severe, if mud-stained clothes have to be removed, or if extensive dressings have to be applied, a firm, long table should be placed near the bed to lay the sufferer on in the first instance. This should be so arranged that soiling may do no harm; old sheets, waterproof material, or even newspapers, used as a protection.

A firm mattress, not a feather bed, should be selected. If there is much injury, or if the dressings have to be applied, a draw-sheet should be placed on the bed. It should be of four or more thicknesses, extend across the bed, and reach from the middle of the patient's back to the knees. A piece of waterproof sheeting or oilcloth should be placed under the draw-sheet. As the draw-sheet becomes soiled, the soiled portion should be rolled up and a clean part drawn smoothly under the patient.

In fracture of the leg or thigh, sprained ankle, and some other cases, a "cradle" should be improvised. The use of a "cradle" is to support the bed-clothes and keep them from pressing on the limb. Band-boxes, three-legged stools, and similar articles may be used. A corkscrew passed through the bed-clothes with its point guarded by a cork, and tied by a string to the bed or a nail in the wall, will relieve the pressure of the bed-clothes effectually.

In taking clothes off an injured person a few rules should be borne in mind.

In serious cases it is much better to sacrifice the clothes than to run any risk of increasing the injury.

In removing a coat, etc., in case of a fractured arm, the uninjured arm should be drawn out first.

In putting on anything the injured arm should be put in first.

In burns and scalds nothing should ever be dragged off. A sharp pair of scissors should be used, and everything not adhering should be cut away. If anything adheres, it should be left until medical aid can be obtained. The clothing adhering may, with advantage, be soaked with oil. To remove the trousers from a severely injured limb, the outside seam should be ripped.

A fire in the room will generally be of service, even in summer. There should be plenty of water, both hot and cold, also several basins (stoneware or enameled preferred), plenty of clean towels and soap. There should be slop jars or pails to empty water into; a foot-bath will be useful. The basins should be placed on a table, covered with a towel. Towels folded up should be placed on the same table, and the hot and cold water should be within easy reach.

A new nail brush, scissors, safety pins and needles are sure to be wanted.

In the case of a burn, absorbent cotton, soft cloths, old linen, oil and bicarbonate of soda (baking soda) should be ready.

In the case of bleeding; sponges, plenty of hot water and several basins should be ready.

In the case of a person rescued from drowning, the sheets should be taken off the bed, plenty of blankets should be heated before the fire and several hot water bottles should be ready.

CONTAGIOUS DISEASES

Infectious or contagious diseases are spread by means of minute particles of matter called germs, given off from the body of the diseased person, and may be passed from infected persons to furniture and clothing, or find their way out into water, food and air, and may be introduced into the system by breathing, eating and drinking, or through the skin.

In these diseases certain parts of the body are breeding places for disease-producing germs, thus discharges from these parts give them off in the greatest amount. The manner by which the more common contagious diseases are spread is shown in the following list:

Small-pox—From the pustules; the contagion is very diffusive and continues for a long time in the scab.

Scarlet fever—From the mouth, throat, nose and skin; from the breath and saliva.

Diphtheria—From discharges of the mouth, throat and nose. The spittle, wet or dry, is very dangerous, as particles of the membrane may be carried and impart the disease at great distances.

Measles—From the mouth, throat and skin. Very communicable from the breath when laden with infectious particles expelled in coughing.

Whooping Cough—From the sputum. Infectious particles are expelled by coughing and carried through the air.

Typhoid Fever—From discharges of bowels or urinary organs. Water, milk and food absorb and convey these discharges.

Consumption—From the spittle. Dried spittle forms a very frequent source of infection in this disease.

Typhus Fever—From the breath directly and by eruption.

Yellow Fever—From the clothing, utensils, etc., or by insects.

Cholera—From discharges from the bowels.

Sore Throat—From the breath by inhalation or from contact.

Mumps—From the spittle, conveyable at short distances.

Skin diseases—From cloths, towels, combs, brushes, etc.

Sore Eyes—From discharges, conveyed through towels, etc.

Pneumonia—This disease is said to be conveyable through the spittle.

Contagious and infectious diseases may be controlled, prevented and ultimately eradicated by the use of systematic means.

Isolation and disinfection are the most important means for the prevention of the spread of contagious and infectious disease.

Isolation means the separation of the sick from the well.

A series of pamphlets and bulletins upon the subject of contagious diseases are issued by Johnson & Johnson, the publishers of this Manual. They are all written from the standpoint of the best authorities upon sanitation and embrace the latest and best known methods used by Health Boards in combating contagious and infectious disease.

The directions given in these bulletins are plain and simple, yet the most effective of the known methods. They include methods of isolation, prevention of the spread of disease, hints on nursing in contagious disease, and methods of disinfection with copious illustrations, etc.

The disinfectants and articles named in these bulletins are easily procurable and can be used with safety and effectiveness by ordinary persons.

In times of epidemics it would be an act of good judgment to obtain copies of these bulletins and distribute them throughout the community. The list is as follows:

No. 18—"A Book with a Mission"—Illustrated booklet of thirty-two pages giving brief suggestions applicable to all of the more common contagious diseases.

No. 28—Diphtheria bulletin, illustrated, eight pages.

No. 29—Typhoid Fever bulletin, illustrated, eight pages.

No. 38—Meningitis bulletin, illustrated, eight pages.

No. 39—Scarlet Fever bulletin, illustrated, eight pages.

No. 40—Measles bulletin, illustrated, eight pages.

No. 56—Consumption bulletin, illustrated, eight pages.

No. 57—Small-pox bulletin, illustrated, showing typical forms of small-pox, hints on vaccination, nursing, etc.; sixteen pages.

No. 43—Whooping Cough bulletin, illustrated, eight pages.

No. 44 A—Sick-room Rules, specific rules printed on a card intended to be hung in the sick-room at the time of contagious diseases.

The following suggestions condensed from "A Book with a Mission" for isolation and care of the sick should be observed:

The sick room should be separated as much as possible from the other rooms of the house. If there is more than one door, lock all but one.

Over the door to be used, tack a sheet in the form of a curtain. Sprinkle this sheet occasionally with the disinfecting solution, Camphenol.

Keep the room always well aired, yet keep it at as nearly an even temperature as possible.

Let the direct sunlight in unless it seems to hurt the patient's eyes.

Bedding should be changed frequently. Throw the soiled bed-clothes into a tub or pail containing a solution of Camphenol (one teaspoonful of Camphenol to one quart of water) before removing them from the room. In taking the soiled bedding from the room to be washed, wrap it in a sheet dampened with this Camphenol solution.

All dishes, cups, glasses, spoons and utensils which have been in the sick-room, should be disinfected before being taken from the room. Scalding hot water with Camphenol solution should be used.

Toys, shears, vases, combs, brushes, or anything handled by or that has come near the patient should likewise be disinfected.

It is a good and safe rule in these diseases to consider that everything that has been carried into the sick-room has become infected and needs disinfecting before being carried out and used elsewhere.

The dishes which the patient uses should not be used by others or washed with other dishes.

All articles of food should be burned, or else mixed with Camphenol and buried.

The bodily discharges from the sick should all be considered dangerous.

Excreta from bowels or kidneys should be immediately covered with a solution of Camphenol (one tablespoonful Camphenol to one pint of water).

The discharges should never be thrown where they might contaminate a running stream. They should not be buried within one hundred feet of a well or spring.

Vessels used to catch discharges should be thoroughly disinfected with boiling water containing a tablespoonful of Camphenol in each pint.

During the progress of any contagious disease the rooms, other than those used by the sick, should be disinfected occasionally in order to prevent the spread of infection and also destroy odors. This may be accomplished by using the Lister's Fumigators.

To Deodorize a Sick or Living Room:—One Lister's Fumigator in the room will be quite sufficient. In such cases it is not necessary to close the windows or doors, although more efficient work will be done if this caution is observed. At any rate, the windows and other vents may be opened as soon as the candle has burned out. This procedure is fully thorough enough to destroy the odors of tobacco smoke, dampness or mould, odors arising from crowded quarters, noxious vapors, etc.

In the sick room Casino Pastils may be used from time to time. These will purify the atmosphere and leave a pleasant odor.

Casino Pastils are small squares of combustible material in which is incorporated a combination of cresylic acid, camphor, oil of cassia, etc., blended with aromatics. Upon lighting, there is evolved a vapor which is a germ-destroying agent and deodorizer. The vapor is so mild, however, that removal of the patient from the room is not necessary.

DISINFECTION

The most important point in the prevention of spread of disease is the disinfection of rooms in which sickness of any infectious or contagious nature has been. After recovery or death of the patient, before being used the room should be thoroughly disinfected. For this purpose the following suggestions will be found useful. They are compiled from the use of experienced physicians and health officers.

Burn all articles of no particular value which have been used by the sick person.

All articles which have been in the room during the sickness should be left for disinfection.

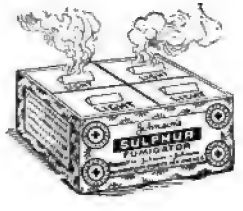
All articles of clothing, bedding, cloths, etc., which can be washed should be immersed in a solution of carbolic acid or Camphenol (sixteen tablespoonfuls of Camphenol to a pail of water).

All articles should be spread out or arranged so as to be well exposed to the germ-destroying gas. Carpets should be taken up and laid out on chairs. All doors, windows, fire-places, flues, keyholes and small openings should be closed with strips of paper pasted over them. What is known as Johnson's Sulphur Fumigator or Lister's Formaldehyde Fumigator may be used for disinfection. Two of Johnson's Sulphur Fumigators should be used to an ordinary size room.

SULPHUR DISINFECTION

Sulphur, from its cheapness and harmlessness, has long been the most popular disinfectant. Modern research has produced agents more certainly effective, yet sulphur destroys nearly all disease-making microbes.

Disinfection by sulphur has been for a long time found troublesome and dangerous. The reason for this was that sulphur was so difficult to set alight. A large fire was required and elaborate precautions as to containing vessel, etc.



All this trouble has been done away with since the production of the Johnson Sulphur Fumigator. This consists, as shown in illustration, of sulphur enclosed in a fire-proof box. Thus danger is eliminated, the candle may be burned anywhere. The difficulty of lighting is overcome by the provision of a wick which only needs touching with a lighted match, and from which the whole mass of the sulphur will light.

Not only is Johnson's Fumigator thoroughly practical, but it affords without trouble the best results theoretically possible.

For occasional disinfection, also, Johnson's Fumigators are found very efficacious. If one fumigator is burned at intervals in cellars, stables, outhouses, etc., diseases will be effectually prevented and all insect life destroyed.

Sulphurous acid is a particularly effective germicide, and placing these fumigators in a shallow pan of water, the water being allowed to fill the pan to about one-half of the side of the fumigator, there will follow a votalization of the water and a consequent union of the sulphur fumes and moisture, with a production of sulphurous acid. It is well to observe that the pan or vessel in which the fumigators are placed should be quite large in circumference in order to keep up a supply of moisture. Four of the small fumigators used in this manner will votalize over one pint of water.

Like formaldehyde, sulphur may be be used to free a room from mosquitoes or other insects. It will destroy all sorts of insects with absolute certainty.

Johnson's Sulphur Fumigators are supplied in two sizes, a 10 cent and a 25 cent size.

Two of Johnson's Sulphur Fumigators should be used to an ordinary size room.

After the candles have been lighted, the doors should be closed for fully twenty-four hours after fumigation.

After the room has been thoroughly aired, all the furniture, woodwork, walls, ceilings and the floor should be brushed over with a strong solution of Camphenol, and furthermore should be scrubbed with soap and hot water. The walls should be painted over with two coats of white wash, and finally left open to air and become thoroughly dry.

To deodorize the sick room, a preparation known as Casino Pastils is advised. These will purify the atmosphere and leave a pleasant odor.

LISTER'S FUMIGATORS

This is a candle enclosed in a fireproof case. If set on a plate and lighted the room will at once be filled with germ-destroying vapors.

Lister's Formaldehyde Fumigator.

Lister's Fumigators are well established as the simplest, most effective and cheapest means of disinfection. They afford a means whereby every house and every room can easily be disinfected during and after every case of infectious disease.

Health officers, Boards of Health and other authorities have adopted this method of using formaldehyde, it being cheaper and easier than the complicated apparatus now in use.

School superintendents, railroads, hotel keepers and persons in charge of public places have found this a ready means of destroying foul odors and preventing contagion.

Housekeepers and the public generally have successfully used Lister's Fumigators for disinfection in houses in times of contagious diseases, for purifying cellars, outhouses, and in times of housecleaning, for ridding premises of Insects, moulds and foul odors.

A brief summary of the advantages of Lister's Fumigator may be made as follows:

They give off a gas which is the most powerful and effective fumigating agent known.

They will not tarnish silver, corrode metals, roughen polished wood or harm delicate cloth fabrics.

They are not dangerous or poisonous.

The vapors can be easily gotton rid of.

Disinfecting room with Lister's Fumigator, showing method of sealing doors and windows and opening out contents of rooms.

They are so compact that several may be carried in the pocket at a time.

They are so powerful that one candle will suffice for an ordinary room.

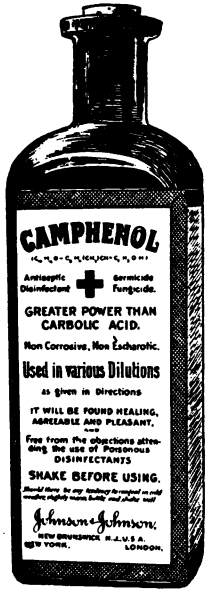
They are easy to operate and in no way dangerous.

They are the most deadly enemy t[illegible] germs. They are cheap.

Camphenol is a liquid disinfectant which is in large use by physicians, boards of health and institutions.

Camphenol is a true and effective disinfectant, a reliable destroyer of disease germs. Comphenol will not destroy or injure clothing, fabrics or furniture; it leaves no stain.

Camphenol is put up in eight-ounce (half pint) bottles and in one-ounce bottles. The large size when diluted according to directions furnishes from three to six gallons of efficient disinfecting fluid. This style is sold at retail for fifty cents per bottle.



The one-ounce size upon dilution furnishes from one to three quarts of disinfecting solution. The retail price of the small size is ten cents a bottle.

A bottle or a solution of Camphenol should be kept always at hand in the sick room for disinfecting soiled clothes or bedding, or for washing walls or furniture to be certain of cleanliness.

Garbage barrels and rubbish heaps should be frequently wet down with four tablespoonfuls of Camphenol mixed with two quarts of water.

A solution of Camphenol, eight tablespoonfuls to one quart of water, sprinkled or poured over places where dampness and foul odors collect, will destroy growth, quench odors and tend to keep away disease.

In contagious diseases, a solution of Camphenol (sixteen tablespoonfuls to a large pail of water) should be kept standing in the sick room ready for use.

Saturate a sheet with this solution and hang before the door to prevent escape of contagion to other parts of the house. Keep vessels used in the sick room always wet with the mixture.

All bedding or clothes of any nature used by the sick should be immersed in this solution before being carried from the room.

Hands and face, after handling the sick or being in the sick room, should be washed in a solution of Camphenol, made with one tablespoonful Camphenol to one quart of water.

Body of patient should be sponged with the solution.

Bodies of the dead should be wrapped in a sheet wet with a solution of Camphenol, four tablespoonfuls of Camphenol to one quart of water.

After recovery or death every article in the room should be washed with Camphenol solution.

Camphenol is very pleasant, easy and safe to use as a disinfectant, and is useful in every disease, as well as for the variety of purposes in the household.

COMMUNICABLE DISEASES OF ANIMALS.

Many diseases of animals are more or less communicable to man as well as to other animals.

In these diseases the danger may be diminished by the disinfection of things where the disease is known or suspected to be present.

All things such as harness, bits, blankets and covers should be disinfected. Straw and anything else used in bedding should be burned.

Walls of the stable should be washed with a strong solution of Camphenol and hot water, and where possible whitewashed with lime.

Floors should be sprinkled with a solution of Camphenol.

All well animals should be in a clean, fresh place.

Dead animals should be immediately disposed of by burial, covered with quick-lime to the depth of four inches, then with soil. There should be during and following the course of the disease thorough disinfection of the infected premises, keeping great cleanliness both of surroundings and food. For disinfectants use unslacked lime, or milk of lime over affected grounds and floors. Whitewash the woodwork on the outside of the buildings. Camphenol may be used for washing harness, floors, pans, pads, etc.

INSECT BORNE DISEASES

Scientific men are becoming more and more convinced that insects, particularly the mosquito, are carriers of disease. It has been established beyond question that elephantiasis, malarial fever and yellow fever are spread by the mosquito. The insect acts as a carrier or go-between, sucking the blood of the sick person and in due course carrying the infection to a well person whom it next bites. The truth of this has long since been thoroughly demonstrated.

In Cuba, measures directed against certain species of the mosquito, has stamped out yellow fever. The destruction of the mosquito in malarial regions also has materially aided in the eradication of the infection.

In these diseases, and in fact in every infection, it would therefore seem to be a wise precaution:—

To kill all the mosquitoes in and around the sick room.

To prevent mosquitoes from biting persons who are sick.

To prevent mosquitoes from biting healthy persons.

For the destruction of mosquitoes in the larval stage: Various remedies have been suggested, such as sprinkling kerosene upon all standing water or pools.

Another method which has been quite successful is to disinfect all pools of standing water by some such disinfectant as Camphenol; this will act both as a disinfectant and destroyer of the mosquito larvæ.

To ensure permanent work, pools, etc., should be drained or filled.

Mosquitoes breed in stagnant water. All cans, bottles or other receptacles about the yard or house that collect and hold water should be cleared out.

For the destruction of the mosquitoes when flying: Fumigation by means of formaldehyde gas, sulphur dioxide or any of the chemical agents.

For house or room use, the employment of these latter agents has been advised.

The unpleasantness of the odors, however, is a somewhat objectionable feature.

To obviate the difficulty, and at the same time to secure the benefits of gaseous disinfection, we have devised a disinfecting candle which we have named Wood's Fumigator.

Wood's Fumigators are small pyramid-shaped candles, giving off fumes which, although not strong or violent enough to be dangerous to human beings or animals, have been found to be especially obnoxious to mosquitoes.

Wood's Fumigators offer the simplest and by far the most effective method for carrying out the necessary preventive measures. In and about the sick-room nothing could be so convenient. Their odor is not unpleasant and not dangerous; they only need to be set on a plate and touched at the tip with a match. It is strongly advisable that one of the Fumigators be burned in each room at least once a week.

To disinfect clothing, burn one of Wood's Fumigators in the wardrobe, being sure to shut door tightly, stuffing keyhole and pasting paper over any cracks.

Small rooms and trunks may be disinfected in the same way.

Wood's Fumigators are sold by druggists at 10 cents each.

POISONS.

Poisons are substances which, taken into the system in small quantities, will produce death or serious disorder.

The symptoms of the various poisons differ according to the individual substance. As a general rule without medical training, it is impossible to distinguish them as some of the substances have a combined action, both irritant and systemic.

Poisons, however, may be roughly classified as follows:

1. Irritating poisons in which the symptoms appear entirely at the location of the poison.
2. General poisons, in which the poison affects the system at large in addition to producing local irritation.
3. Narcotic or sleep-producing poisons.
4. General poisons, in which there is no local irritation.

In the first mentioned cases it is best not to cause vomiting. Give dilute acids to neutralize alkalies, and dilute alkalies to neutralize acids. Follow with soothing drinks of oil, raw eggs, and flour and water. Give opiates to quiet pain, and whiskey or brandy to relieve the weakness.

In the second class (except in cases of arsenic) no emetic should be given. The effect of the poison is best counteracted by bland doses of oil, flour and water, white of egg, and the like, while stimulating drinks should be given to counteract depression. The treatment of arsenic is peculiar to itself and should be studied individually in the tables.

In the third class, sleep-producing poisons, after producing repeated vomiting, make the patient drink strong coffee and other stimulating drinks, and use every available means to keep him awake.

In the fourth class, general poisons, give an emetic, follow this with stimulating drinks to relieve weakness; give opiates to relieve pain, and put the patient to rest.

EMETICS.

In most cases the most important step is to empty the stomach. Substances used for this purpose are called emetics.

Medical men administer ipecac, apomorphine, sulphate of zinc, tartar emetic, and other drugs. The readily available means of producing vomiting, here given, may be employed while awaiting their arrival.

Give a tumbler of warm water with a tablespoonful of ground dry mustard stirred into it. If not successful in producing vomiting, follow this with a second tumblerful of the mixture, then push the forefinger as far down the throat as possible, and keep it there until the patient does vomit. The forefinger is the very best of all emetics, especially in narcotic poisoning. Stir a teaspoonful of salt into the water. Or give a teaspoonful to a child, a tablespoonful to an adult, of wine or syrup of ipecac every few moments, following each dose with a glass of warm water and then the forefinger, or give twenty grains of sulphate of zinc in warm water. It is often very difficult to make a person vomit who has taken opium, as the sensibility of the stomach is deadened. In any and every case of poisoning never cease your efforts until free vomiting has taken place. Use all of

the methods mentioned or any one of them at hand. Do not hesitate to thrust the forefinger down the throat immediately: follow with a glass or two of warm water. Repeat this process several times.

Drinking mustard or salt and water, made by adding a tablespoonful of common salt, or powdered mustard, to a tumblerful of lukewarm water, makes an excellent emetic.

Stimulants may be given, particularly in the narcotic poisons. If the patient can swallow they may be given by the mouth, provided the poisoning is not due to corrosives, or by the rectum (lower bowel), or by inhalation. The stimulants administered are those ordinarily used. Strong coffee is of the greatest value in narcotic poisoning, and it may be given either by the mouth or rectum. When stimulants are given by the rectum, the amount should be considerably larger than when given by the mouth, and it should be diluted with sufficient warm water or milk to make a cupful. Ammonia, and nitrite of amyl can be given by inhalation; they should always be administered by dropping a sufficient amount on a handkerchief or in the palm of the hand. The bottle should never be held to the nose. Stimulants should be given by inhalation, with great caution, as they are liable to irritate the inflamed membranes. Nitrite of amyl is a powerful heart stimulant, and should be used with care. It can be obtained in small glass capsules, which are broken while held inside a handkerchief and then applied to the nostrils.

The following list comprises those poisons which are commonly met with.

ACIDS.

Sulphuric (oil of vitriol), Muriatic (spirit of salt), Nitric (aquafortis), Acetic, Carbolic, Oxalic.

SYMPTOMS.—Mucous membrane of lips, mouth and throat greatly inflamed and swollen, with more or less destruction of the tissue, and symptoms of shock. When taken in a concentrated form, muriatic and sulphuric acids discolor the lips and mouth black, while nitric acid stains these tissues yellow; when oxalic and carbolic acids have been taken, the membrane has a whitish appearance.

TREATMENT.—For sulphuric, muriatic, nitric, and acetic acids give immediately a solution of baking soda or magnesia, chalk, white crayon, lime, soap-suds, or chalk tooth-powder, raw eggs, milk or sweet oil.

Oxalic Acid. Used for cleaning kitchen boilers, and thus accidentally introduced into food.

SYMPTOMS.—Similar to other acids and corrosives.

TREATMENT.—Lime, chalk or magnesia in some form should be administered (lime may be scraped from the wall or ceiling); also white crayons, tooth-powder, etc. Do not use soda, potash or ammonia. Castor-oil or sweet-oil may be administered by the mouth, and rectal stimulants resorted to. Poisoning by salts of lemon salts of sorrel, which contain oxalic acid, should be treated as above.

Carbolic Acid, Creasote.

SYMPTOMS.—Characteristic odor; flesh red and burned wherever the corrosive has touched.

TREATMENT.—If seen immediately, give castor-oil, sweet oil, raw eggs, followed by an emetic. Full strength alcohol will act as an antidote to the burn-

ing sensation upon the flesh. Epsom salts or Glauber salts should be given in large doses.

Alkali Poisoning.—Caustic soda, caustic potash, washing soda, pearl ash, washing powder, household ammonia, ordinary ammonia, etc.

SYMPTOMS.—Burning inflammation and swelling of the lips and mouth.

TREATMENT.—Something acid should be given freely and at once, such as vinegar, juice of orange or lemon, hard cider, juice of sour fruits, citric or tartaric acids. Also give raw eggs, sweet-oil, barley water, or arrowroot gruel.

Alcohol.

TREATMENT.—Keep the patient active by pinching, slapping with wet towel, or hot and cold douches to head and spine; give plenty of strong coffee by stomach or rectum; inhale ammonia cautiously and use artificial respiration if unconscious.

Camphor.

SYMPTOMS.—Characteristic odor; surface of body cold and clammy; disturbances of vision; noise in ears; delirium and convulsions.

TREATMENT.—Give emetics and stimulants, apply warmth to extremities.

Chloroform.

TREATMENT.—When poisoning is caused by inhalation, artificial respiration should be performed (see Drowning); also apply friction; give plenty of fresh air; the patient's head should be low.

When poisoning follows the internal use of chloroform, large doses of bicarbonate of soda in water should be given internally, in addition to other means of resuscitation.

Hydrate of Chloral.—(Chloral). Chloral is often an ingredient in sleeping potions, liniments, knockout drops, etc.

SYMPTOMS.—Weak pulse; labored respiration; heavy breathing; stupor and unconsciousness; sometimes convulsions.

TREATMENT.—If the patient is seen immediately after a poisonous dose has been taken, give an emetic. Give stimulants; apply warmth to extremities; mustard plaster over heart and calves of legs; use artificial respiration.

Prussic Acid.—(Hydrocyanic Acid). One of the deadliest poisons known. Poisoning by cyanide of potassium, peach-pits, and bitter almonds should be treated the same as for Prussic acid.

TREATMENT.—Action should begin at once. Do not stop to give emetics; give stimulants freely; apply hot and cold douches; artificial respiration.

Spanish Fly—(Cantharides.)

SYMPTOMS.—Burning sensation in mouth and throat; violent pain in abdomen; vomiting and purging; vomited matter may contain blood; great irritation of urinary organs with bloody urine; delirium and convulsions.

TREATMENT.—Give emetics; if recently swallowed, give raw eggs, sweet-oil, milk. Stimulants (by rectum) if necessary; heat; apply poultices or hot cloths over the abdomen.

Aconite.—(Monkshood, Wolfsbane). This drug is exceedingly poisonous; is commonly found in liniments and ointments.

SYMPTOMS.—Tingling of the lips, mouth and throat; numbness of extremities; pulse slow and weak; convulsions may sometimes occur.

TREATMENT.—Give emetics; use stimulants; apply warmth to extremities; mustard plaster over heart and calves of legs. If insensible, use artificial respiration.

Nux Vomica.—(Strychnine the active principle). Dog Button.

SYMPTOMS.—Irritable condition and twitching of the muscular system, followed by severe convulsions, recurring at intervals. The contractions sometimes cause the body to assume the form of a bow, with great pain.

TREATMENT.—Give strong tea; animal charcoal, and follow this by an emetic. A pearl of nitrite of amyl may be broken in a handkerchief and inhaled. Use artificial respiration when necessary.

Opium.—Morphine (the active principle of opium), tincture of opium (laudanum), camphorated tincture of opium, paregoric, McMunn's elixir, codeine, and narceine, etc. Opium is an ingredient in many preparations, such as cough mixtures, soothing syrups for children, and many patent medicines.

SYMPTOMS.—Usually more or less mental excitement, followed by great depression, headache, sensation of weight in the limbs, an irresistible desire to sleep, deepening into a stupor; pupils are contracted, the respirations are greatly diminished, the skin is cold and clammy and the face pale. Convulsions sometimes follow.

TREATMENT.—Give emetics; apply water to the head, face and spine; give coffee by rectum or mouth. Do not give stimulants. Keep the patient aroused by walking, whipping or other means; use artificial respiration if necessary.

Arsenic.—This substance is a universal source of poisoning accidents in the powder form (arsenic acid), and in Fowler's solution which is used in medicine. It is an ingredient of fly paper, insect exterminators, rat poisons, etc. Paris green or Scheele's Green is the arsenite of copper. Orpiment or king's yellow and realgar are preparations of arsenic. Arsenic is used for stuffing birds, for coloring paper, flowers, etc.

SYMPTOMS.—If Paris green or any of the colored preparations of arsenic have been taken, the color may be seen about the mouth or on the clothing. Fowler's solution has a lavender odor and a pink color.

SYMPTOMS.—Intense burning pain in pit of stomach, faintness and depression; vomiting and purging; vomited matter streaked with blood. Abdomen tender and painful; skin cold and clammy.

TREATMENT.—Give emetics promptly, such as draughts of hot greasy water, or salt and water; a large amount of magnesia may be given, if not at hand give lime scraped from the walls or ceilings; castor-oil, sweet-oil or equal parts of sweet-oil and lime water, or lime water alone; raw eggs; milk; stimulants (well diluted).

A preparation known as Dialysed Iron may be obtained at nearly every drug store. This is a prompt and perfect antidote to arsenic. Directions for use accompany this preparation.

Blue Vitriol.—Blue Stone. (Sulphate of copper.) Subacetate of copper),—Copper poisoning due to substances which have been cooked in copper vessels.

SYMPTOMS.—Vomiting and purging; griping pains; metallic taste in mouth; great thirst and weakness; labored respirations and rapid pulse; dimness of vision; convulsions.

TREATMENT.—Give copious draughts of warm water; emetic (when necessary) raw eggs; milk; stimulants.

Corrosive Sublimate.—(Bichloride of Mercury). This substance is used in solution and tablet form for disinfection as a surgical antiseptic, etc. It is a highly active and dangerous poison.

SYMPTOMS.—Vomiting and purging: intense pain in abdomen; membrane of mouth and tongue white and shriveled; metallic taste in mouth. Pain in stomach and abdomen.

TREATMENT.—If seen immediately after swallowing, give an emetic; give at once abundant doses of white of eggs, milk, mucilage, or mix up an arrowroot gruel, barley water, or flour and water, and give all that the patient will swallow.

Iodine.—Or Iodoform.

SYMPTOMS.—Local irritation and pain; the mucous membrane of the mouth is discolored yellow; vomiting and purging, the vomited matter having a bluish color. Blue color also noticed when vomited matters come in contact with starched articles of clothing.

TREATMENT.—Give any kind of starch or starch food freely; chalk, magnesia, and stimulants, if necessary.

Zinc.—The sulphate or chloride is generally used. (The oxide of zinc is not poisonous).

SYMPTOMS.—Pain and vomiting, great depression; if the chloride has been taken, the mouth will be inflamed.

TREATMENT.—Bicarbonate of soda (baking powder) in water; milk, eggs, strong tea.

Phosphorus.—Poisoning frequently occurs as the result of sucking or swallowing the heads of matches.

SYMPTOMS.—Vomiting and purging; vomited matter is luminous in the dark with odor of garlic. Intense pain in abdomen.

TREATMENT.—Give emetics, followed by magnesia, white of eggs, olive-oil.

Tartar Emetic.—(Antimony or Stibium).

SYMPTOMS.—Vomiting and purging; skin cold and clammy; collapse.

TREATMENT.—Give warm water freely. Give stimulants; strong tea or coffee, and apply warmth.

Lead.—(Red Lead, Sugar Lead, White Lead, Paints.) These poisons cause cramps, paralysis, convulsions, giddiness, stupor.

TREATMENT.—Cause vomiting; give large doses of Epsom or Glauber Salts; apply mustard plasters to extremities; give stimulating, sweet or mucilaginous drinks.

In acute attacks of lead colic, the same treatment may be pursued, except to omit the vomiting.

Vegetable Poisons.—Known or unknown herbs such as hellebore, bitter-sweet, poke berries, hemlock, Jamestown weed, tobacco, etc.

The most of these cause vomiting, intoxication, stupor, etc.

It is a safe rule to cause vomiting; give warm drinks and stimulants.

Poison ivy, poison oak, poison sumac, and other plants which cause a painful rash either by direct contact or by emanations or near approach.

Wash with a strong solution of baking soda (bicarbonate of soda) or saleratus at the beginning. Dress with vaseline, oxide of zinc, ointment or any soothing dressing. A lather made of the Surgeons Soap in the Johnson's Accident Case will allay the itching and burning.

Belladonna.—(Deadly Night-shade). This drug is contained in cough mixtures, liniments, ointments and plasters. The active principle of Atropine is used in eye ointments and washes. Poisoning may occur by absorbtion through the skin.

SYMPTOMS.—Pupils dilated; headache; intense dryness of mucous membrane of mouth, throat and nasal cavity; inability to swallow; face flushed; delirum and stupor, or convulsions.

TREATMENT.—Give emetics; stimulants; apply warmth to extremities; mustard plaster to feet; if insensible, artificial respiration.

Fox Glove.—(Digitalis).

SYMPTOMS.—Purging and vomiting; pain in abdomen; face pale; pupils dilated; skin cold and clammy; pulse feeble and slow; depression; gasping respiration; delirium and convulsions.

TREATMENT.—In cases where large dose of digitalis has been taken, give emetics, followed by repeated draughts of strong tea; apply mustard plaster over the heart, and calves of the legs; give stimulants internally.

Poisonous Mushrooms.—(Toadstools).

SYMPTOMS.—Colic; vomiting and purging; dilated pupils; muscular weakness; mental excitement.

TREATMENT.—Give emetics: castor-oil; stimulants; apply heat.

The same treatment is applicable to poisoning by eating mussels or poisonous fish.

DOMESTIC EMERGENCIES

This Manual is primarily designed to meet accidents which occur in the factory and workshop, and does not, except incidentally, touch upon such emergencies as are liable to occur in the household. It has been printed in response to a legitimate demand for some simple suggestions for emergencies which may arise at a time when skilled medical assistance cannot be obtained at once. Emergencies may arise at night, when travelling, camping out or in situations where a physician cannot be summoned. No attempt will be made, however to suggest the selection or administration of medicines, as the editor of this Manual is firm in his opinion that drugs should be administered only under the direction of a physician. The suggestions which follow are therefore confined to simple measures which do not require the use of drugs. In all emergencies the first thing to do is to send for a physician.

FEVER.—Symptoms of fever often develop suddenly in children, producing alarming symptoms. The best thing to do is to undress the person and put him to bed. Do not cover up too warm; he will be more comfortable with a moderate amount of covering. Give cooling drinks; nothing to eat, except milk. Bathing with moderately cool water will give slight relief.

COLIC.—Apply heat in the form of hot water bags, or bottles, hot plates, and mustard plaster over the seat of pain. Hot baths are sometimes useful.

FOR CHOLERA-MORBUS.—The same line of treatment may be pursued.

DIARRHEA-DYSENTARY.—For a simple diarrhea, such as usually follows a cold or indigestion, a little ginger tea, peppermint or other warm drink will usually bring relief. A tablespoonful of sweet oil for an adult, a teaspoonful for a child will relieve irritation. For dysentery which follows diarrhea, rest in bed; hot compresses, or mustard plasters to abdomen and soles of feet will bring relief.

VOMITING.—Give large amounts of hot water, as hot as can be taken. Patient should always lie down. Small bits of ice held in the mouth or swallowed, will relieve vomiting caused by indigestion. A lump of ice held against the pit of the stomach will sometimes bring relief. When other means fail, apply a mustard plaster to the pit of the stomach.

HICCOUGH.—In severe attacks apply mustard plasters over the stomach. Hot vinegar, brandy or whiskey applied in the same manner will sometimes bring relief. Let the patient draw a deep breath and hold it as long as possible.

ANGINA PECTORIS.—Apply cold over the region of the heart. This is more grateful to some people than heat, and should be tried first. Hot applications, such as hot water bags, hot cloths and mustard plasters may be used where cold applications fail. Inhale amyl nitrite.

ASTHMA.—Persons susceptible to attacks of asthma should keep a supply of suitable burning or inhaling material for immediate use (asthma cigarettes). If such are not at hand, saturate a piece of blotting paper with a strong solution of saltpeter, dry and ignite; let the patient inhale the fumes. If no other means are at hand, let the person attacked engage in some diversion that will occupy attention, such as smoking a cigar or pipe, reading a book or paper, writing, etc.

CROUP.—In sudden attacks divert the patient's attention and allay fears. Often the playing with a toy or listening to a story will cause symptons to disappear. Keep the room warm and, if possible, have water boiling in the room, in such a way that the steam will reach the sufferer. Flannels wrung out in hot water may be applied to the throat and covered with some waterproof material. Mustard plasters to the soles of the feet and to the chest (for a few moments only).

Hot foot baths to the knees will often bring relief, but if warm applications do not bring relief, try cold. In membranous croup, slack lime in the room under a tent allowing the patient to inhale the steam. Never neglect to summon a physician in every case of croup.

HERNIA-STRANGULATED.—Place the patient on his back in bed; elevate the foot of the bed about twelve inches; bend the legs back towards the abdomen. Apply to the hernia, towels or cloths wrung out in hot water; if these do not bring relief, apply cold.

CRAMPS.—If in muscles of leg, etc., bathe the part in water as hot as can be borne; apply mustard plaster to the part affected, and to the extremities.

Cramps of the stomach are sometimes dangerous. Apply hot cloths over the stomach or mustard plasters at the pit of the stomach and the extremities.

SUPPRESSION OF URINE.—Apply hot cloths over bladder; give a warm sitz-bath. In some instances walking over a cold wet floor or dashing cold water on the legs and thighs, will cause a discharge and bring relief.

NERVOUSNESS.—In severe attacks, put the patient to bed; give hot drinks, especially coffee; apply heat or mustard to soles of feet, back and chest.

NEURALGIA.—Apply a mustard plaster or hot cloths over the seat of pain. If hot applications fail to relieve, apply cold.

EARACHE.—Apply cloths wrung out of hot water, to the head, or near the seat of pain. A hop poultice will be found very useful. Give hot drinks. Moisten a bit of cotton with sweet oil and laudanum and put in the ear.

Brief Rules for Cases of Emergency in Children.

(1) If the child is suddenly attacked with vomiting, purging, and prostration, send for a doctor at once. In the meantime, put the child for a few minutes in a hot bath, then carefully wipe it dry with a warm towel, and wrap it in warm blankets. If its hands and feet are cold, bottles filled with hot water and wrapped in flannel should be laid against them.

(2) A mush-poultice, or one made of flaxseed meal, to which one quarter part of mustard flour has been added, or flannels wrung out of hot vinegar and water, should be placed over the belly.

(3) Five drops of brandy in a teaspoonful of water may be given every ten or fifteen minutes; but if the vomiting persists, give brandy, milk and lime-water in the same quantity.

(4) If the diarrhea has just begun, or if it is caused by improper food, a teaspoonful of castor oil, or of the spiced syrup of rhubarb, should be given.

(5) If the child has been fed partly on the breast and partly on other food, the mother's milk alone must now be used. If the child has been weaned, it should have its milk-food diluted with lime-water, or should have weak beef-tea, or chicken broth.

(6) The child should be allowed to drink cold water freely.

(7) The soiled diapers or the discharges should at once be removed from the room, but saved for the physician to examine at his visit.

These rules were suggested by the Committee of the Obstetrical Society of Philadelphia.

MUSTARD PLASTER

A noted medical writer states that mustard plasters are applicable to four-fifths of all the ailments that are met with in every day life. "No matter what else we may do," he says, "or what other remedies we may use, we cannot afford to treat diseases without the use of mustard plasters. Five hundred should be used where one is now applied."

Mustard plasters are the cheapest remedy that can be obtained; they do not interfere with other treatment and when used, the danger of stuffing the sick with drugs is avoided.

In the first aid to the injured the prompt application of a mustard plaster is of great service, so various suggestions for its use in emergency are given throughout this Manual. The following additional suggestions are given by the authority noted above: Wherever there is a cold surface, mustard plasters should be used plentifully on the arms, legs and abdomen, and should be kept in place from twenty to thirty minutes. Also use them for pressure of blood to the head, for coma, delirium, inflammation, nose bleed; apply to the legs, arms and abdomen.

In local congestion, brain congestion, concussion, paralysis, narcotism, headache, apoplexy, hemorrage, stupor, apply frequently on the arms, calves of legs and stomach.

In apoplectic tendency use daily for months.

In sleeplessness, mania, spasmodic affections, hysteria, epilepsy, apply daily to legs and soles of feet.

In affections of the chest, colds, bronchitis, whooping cough, coughs, asthma, congestion; apply to stomach, legs and feet.

In vomiting, spasms, nausea, pains, sea-sickness; apply over stomach, but not on legs unless feet are cold.

In abdominal troubles, spasms, cholera morbus, dysentery, peritonitis, painter's colic, pain in liver, colic pains, diarrhea, cholera, typhilitis, pains in spleen; use frequently and plentifully on arms, legs and abdomen; keep in place twenty to thirty minutes. May be also placed over seat of pain.

In muscular pains, rheumatism, local pains, neuralgic pains, inflammation, sciatica, apply frequently so as to draw blood away from affected spot to a cold surface, as hands and feet.

HOW TO FIX A MUSTARD PLASTER.

Soak in water (warm, but not hot) for two minutes, and apply. The mustard side goes next to the skin. If the skin is very sensitive, a thin piece of wet cloth may be placed between the plaster and the skin. The skin soon grows used to the action of mustard, so that the use of cloth may be discontinued. Half-strength leaves are made by Johnson & Johnson where a mild action only is wanted. On a sensitive skin five to ten minutes will produce a bright red patch. The plaster may then be removed and a fresh one applied in another spot if necessary.

Mustard plasters should never remain long enough to produce a blister. They are liable to do this after thirty minutes. The best way is to put on a fresh one at new points until red spots that will remain, are produced.

The red spot will burn for some minutes after the plaster is taken off, but, unless the pain is unbearable, put nothing on as a dressing. Then use full strength grain alcohol which will stop the burning.

While there are many mustard plasters made which are fairly good when fresh, all those made in this country, save Johnson's, will rapidly deteriorate and lose their activity. Johnson's Mustard Plasters are spread ready for immediate use; simply wet them and then apply.

Their plasters are made of the best Italian mustard seed, carefully cleaned and freed from foreign matter so that they do good work and are always reliable. More relief from pain and more satisfaction can be obtained from Johnson's mustard plaster than from any other one thing known. Such absolute faith is placed in their superiority that no complaint has ever been received.

MEDICATED SOAPS.

Medicated or antiseptic soaps are now being adopted by surgeons, dermatologists and others, to the exclusion of the ordinary toilet soaps. This example is one which may be followed by the laity with good results.

The ordinary toilet or washing soaps are, for the most part, made up of cheap and unwholesome material. Their efficacy, even as a cleansing agent, is often doubtful, and in cases where the skin is affected, their use is often deleterious. On the other hand, properly made antiseptic soaps exert double effect; they give all the cleansing action of soaps proper, and in addition, that of the antiseptic or medicament contained therein. The effects of antiseptic soaps upon the skin are both mechanical and medicinal. They not only cleanse the skin surface, removing foreign matter and skin secretions—diseased products—etc., but penetrate into the glands and dissolve the fatty material filling the ducts, and thus facilitate its removal. Aside from these effects the antiseptic soaps exert an influence upon the nutrition of the skin, stimulating its functions and promoting the absorption of secretions.

In view of these beneficial effects of antiseptic soaps upon the skin, they have been found an excellent application in diseases of the skin and scalp, and are superior to other applications, such as ointments, etc., which impair the functions of the skin by clogging up the glands and interfering with their proper action.

In comparison with other methods, the use of antiseptic or medicated soaps is at once the cheapest, most convenient and agreeable of all. One cake of soap will take the place of many jars of ointment. The treatment is cleanly and may be carried on for long periods. Properly made antiseptic or medicated soaps retain their activity longer than other preparations, and will not become rancid or irritating to the skin, as in case of other applications.

It has been demonstrated that a large number of skin affections are due to the agency of minute organisms growing upon the surface of the skin, as well as those growing in deeper layers. And it has been found that by the combination of an effective antiseptic with a proper soap base, a powerful and penetrating germ-destroying action is secured; much more so than from any other form of application.

Antiseptic soaps are now considered an indispensable adjunct in modern surgery for disinfecting the skin of the patient, and the hands of the surgeon and his assistants. Such soaps are used by physicians, especially after the handling of, or examination of cases of infectious diseases, in midwifery, etc.

The use of antiseptic soap is recommended by the highest authorities in homes where contagious diseases prevail, and in public lavatories. And it may be here noted that antiseptic soaps can be substituted with perfect safety, and as a measure of wise precaution, in the place of an ordinary toilet soap for either public or private use.

To obtain successful results from their use, much will depend upon the purity of the soap base employed and the method of preparation. Johnson's antiseptic soaps are made from pure neutral soap, without the addition of sugar, starch or filling material. The percentage of medicament is uniform, and the ingredients

are thoroughly incorporated. They are made especially for the use of physicians, surgeons, and nurses and are guaranteed to give the highest satisfaction.

Johnson's Tar and Witch-Hazel Soap is made especially for toilet and bath, for washing infants with tender skin, for the complexion, hair and scalp, for skin diseases, chapped hands, wounds and cuts.

Johnson's Carbolic Soap for physicians', surgeons' and nurses' use is applicable to the disinfection of surgeons' hands, purification of wounds, ulcers and sores; itching, skin troubles, female diseases, removal of insects on animals.

Johnson's Corrosive Sublimate Soap for disinfecting the hands, syphilitic sores, skin and infected wounds it is a powerfully antiseptic soap.

Johnson's Ichthyol Soap is recommended by American and European clinicians as a local alternative and anodyne discutient in eczema, acne, lupus, lepra, ulceration; for softening and dispersion of lipomas, in fevers, frostbites, sprains, tumors, and in rheumatism and gout.

Johnson's Antiseptic Soaps are healthful and delightful for use in the toilet or bath.

SUGGESTIONS FOR THE USE OF JOHNSON'S ANTISEPTIC SOAPS.

Compiled from Clinical Reports:—

For cleansing wounds, hands of surgeons, nurses, etc., Carbolic or Tar and Witch-Hazel Soap are recommended.

For cleansing ulcers, sores, discharges, burns, scalds and festers, Tar and Witch-Hazel Soap or Carbolic Soap are preferred. Use by bathing in a strong suds made with warm water or a lather applied with a sponge. After drying, dust on Johnson's Antiseptic Baby Powder. For chapped skin and roughness let the lather dry and dust with Antiseptic Baby Powder.

For babies' bath use only Tar and Witch-Hazel Soap applied with a cloth or sponge. Wash, dry and dust gently with Antiseptic Baby Powder.

For dandruff, baldness, etc., shampoo once or twice a week with Johnson's Tar and Witch-Hazel Soap, rub lather well into the scalp and dry without rinsing.

In skin diseases—either apply by bathing or a heavy lather on a sponge. In acne, comedones and other diseases where a stimulant is required, apply at night a paste made of scraped soap and wash off in the morning.

In all cases where possible, after using the soaps, dust the parts with Johnson's Antiseptic Baby Powder.

SYNOL LIQUID ANTISEPTIC SOAP.

Synol is a liquid antiseptic soap which has been evolved after a long series of experiments with antiseptic soaps and soap bases.

In Synol the antiseptic agents have been made to combine perfectly with the saponaceous compound, in which they are perfectly compatible.

The base of Synol is a highly alkaline soap made of perfectly pure fats, and in addition to, and above the germicidal action, the soap is one which aids in destroying or emulsifying the fats of the skin and its hardened secretions. It softens and loosens the skin scurf, so that the bacteria infesting the depressions of the epidermis and its deeper structure may be destroyed and washed away. In other words, Synol is germicidal, mechanically and chemically: the mechanical and chemical agents assisting each other.

Synol has been used in several clinics and by private surgeons for a number of years and the reports of these observers show that Synol accomplishes the cleansing and sterilization of the hands without irritation and without destroying or roughening the skin. On the whole it renders the skin smooth and soft, thereby lessening the chance of its harboring germs. Indeed the constant use of this soap keeps the skin soft and pliable, and preserves cleanliness in the deeper structures.

Synol Soap is put up in a sterilized glass container with a cap which practically seals the contents, and it may be distributed over the hands without fear of contamination of the soap itself. It is adapted to every conceivable use to which soap can be put, and has been found to be an excellent addition to the bath and toilet of the surgical operators, nurses, attendants and patients.

HOW TO USE SYNOL SOAP.

For ordinary washing or cleansing the hands, pour a teaspoonful of the Synol Soap into the palm of the left hand and wetting the other hand by dipping it into warm water, rub both hands together vigorously making a good lather. Be particular to rub the fingers well, especially about the nails. Then rinse off the lather with a stream of warm water and clean the nails with a dull nail blade or pointed stick. Wipe with a clean towel.

LISTER'S DOG SOAP

NON-POISONOUS

This soap is prepared for the double purpose of exterminating fleas, lice or other vermin that infest animals and also as a cure for mange and all skin diseases of animals or man, such as ringworm, gangrene, canker, open raw wounds and festering sores.

DIRECTIONS FOR USE.

FOR KILLING FLEAS:—Wet the coat with warm water, rub the soap well in with the hands, covering every part of the skin; leave on for a half an hour, then wash with luke-warm water and dry thoroughly.

FOR TREATING MANGE:—Make a good stiff lather, and allow it to dry on the animal. Wrap up warm (or give him a good run) till dry; repeat this treatment three times a week, for a week, or longer, if necessary.

FOR TREATING RAW OR FESTERING SORES ON HORSES: First, shave one-quarter of a cake in thin shavings and dissolve in one pint of warm water and apply with a sponge; allow soap to dry on wound. Same treatment for ringworm, canker or gangrene.

Lister's Dog Soap should not be used on cats.

This soap will be found useful in treating all forms of sores or skin diseases of men.

Lister's Dog Soap possesses very high antiseptic properties, but is entirely free from all poisons or chemicals injurious to man, at the same time cleansing the skin and ridding it from all insects.

Lister's Dog Soap will not attack the tissues of the skin or cause any irritation.

Lister's Dog Soap is made from an entirely new antiseptic which is being used in the hospitals as one of the best known non-poisonous wound dressings.

DAILY CARE OF THE MOUTH AND TEETH

BY DR. B. G. SIMMONS

Decay in the teeth is now known to be caused by a minute germ that attacks tooth structure wherever it finds lodgment for a sufficient length of time.

Decomposition of particles of food are the starting points of this micro-organism. Absolute cleanliness within the mouth is the remedy.

To attain as nearly as possible this condition is the point we must strive for. There are three important points to be observed in best accomplishing this result.

First—Regular and correct use of the brush with proper cleansing agents.

Second—The use of dental floss silk between the teeth.

Third—The regular use of an antiseptic wash for rinsing the mouth, that has germicidal power sufficient to actually destroy germs common to the mouth and the organic ferment which is the starting point of dental caries.

The teeth should be brushed thoroughly twice a day.

The brush should be of medium stiffness, with bristles of unequal length, and in addition to the brushing across the face of the teeth it should be used with a rolling motion, brushing *down* on the upper teeth and *up* on the lower teeth, so

that the bristles penetrate and clean between the teeth, which is the point where the greatest danger lies. The backs of the teeth should also be brushed and particularly the backs of the lower central incisors—a point where tartar is most apt to form. As for a dentifrice to use with the brush, there are many that are good and some that are injurious. I have always advocated the use of a pure, mild soap and the finest grade of precipitated chalk, but it is important that they be of pure quality, and this is not always easy to obtain, particularly in the soap.

To overcome this difficulty I would say that Johnson & Johnson have taken up the manufacture of an article under the name of Lister's Tooth Soap that can be depended upon. It is a mildly alkaline soap combined with the finest grade of French precipitated chalk and is the best article of the kind that I have ever seen. Any dentifrice containing pumice stone, charcoal or any gritty substance is injurious.

Dental Floss Silk should be used between the teeth at least once a day (at night) and preferably after each meal. It removes particles of food that the most persistent brushing could not reach, and it is an important factor in the prevention of decay. It can be obtained on little flat metal bobbins and is called Red Cross Pocket Dental Floss and is far better in every way than toothpicks.

Now as to the use of a thoroughly antiseptic wash in addition to the cleansing described, I consider it absolutely essential and with much experience and continued investigation upon this point I can safely say that a solution of Camphenol is the best thing for this purpose. It is the only antiseptic that can be used freely within the mouth that has sufficient germicidal power to accomplish what is necessary.

One teaspoonful of Camphenol in a pint of water is of sufficient strength for this purpose. The mouth should be thoroughly rinsed with this solution twice a day in connection with other cleansing.

In addition to the rules for cleanliness here given the teeth should be examined by a competent dentist at least twice a year. After your teeth are once put in good order and these rules observed the chances are that there will be little or nothing for him to do, and if there is anything, it will be so slight an operation that it will neither give pain to your nerves or your pocketbook. At first it will take some little perseverance to adhere properly to these rules. Remember that it is not the brush alone, the use of floss silk alone, nor the antiseptic wash alone that is to accomplish the desired result, but all three combined, and persistently used, today, tomorrow, every day. In a short time it will become so much a part of your toilet that there will be little tendency to neglect it and your reward will be sound teeth, and also one of the greatest aids toward general good health, a *sweet, healthy mouth.*

LISTER'S TOOTH SOAP

Lister's Tooth Soap is superior to any dentifrice on the market. It is a combination of the finest grade of precipitated chalk and a mild alkaline soap of guaranteed purity. It is delicately flavored, and possesses considerable antiseptic properties as a dentifrice, and keeps the gums firm and healthy.

Lister's Tooth Soap is packed in a beautiful little slide top aluminum box and is the best and most convenient form of dentifrice because:—

It cleanses, polishes and preserves the teeth.

It forms a pleasant creamy lather in the mouth, that carries off all particles of food.

It is the easiest kind of a package to carry when travelling.

It will not spill over.

There is no waste.

One box will last for months.

Price, ten cents a box.

NON-SURGICAL USES OF ADHESIVE PLASTER.

India-rubber Adhesive Plaster has a great variety of uses independent of its surgical application, though the latter is the more important one. In the drug store it has long been applied to a variety of purposes, namely, the mending of broken or cracked graduates, bottles, stoppers, etc. It has excellent qualities for labeling vessels kept in cellars and in damp places, and for this purpose the cloth back of a suitable strip of the plaster is dusted with French chalk, written upon as though it were paper, placed upon the bottle or other vessel and slightly warmed to increase the adhesiveness.

It is also a very useful article for mending clothing, furniture, and especially india-rubber articles, such as water bags, syringes, hose, water-proofs, mackintoshes, boots, shoes and a thousand and one articles of the household. In fact, anything made of rubber can be repaired, patched and made serviceable through its use. This statement includes bicycle tires, for which large qualities are now consumed, as every rider finds it an indispensable article for his kit, and in this respect it has superseded all liquid appliances.

Its use for mending tires is very simple. When the tire is punctured, the surface around the puncture should be dried, and a strip of tape of adhesive plaster should be laid over the hole in such a way that the puncture is covered several times its length. The tire is moderately inflated and the tape passed around several turns of both the tire and rim. After firmly securing the end the tire is inflated to its full extent.

Still another use for this article is to seal covered jars, cans, etc., making them damp-proof and air-tight. For this purpose it is only necessary to pass a strip of the plaster over the joints of the receptacle, for it will adhere readily to tin or metal, and in this, it is superior to any known substance. A small strip can be used to fasten a lid to a box making a very serviceable hinge.

It has been found that perishable articles, such as food and other substances, when tightly sealed with this plaster are proof against any climatic change. A similar use has been found in closing packages containing photographic material which, when sealed with this material, can be handled and shipped to any part of the world without deterioration, being well protected from light and moisture.

Adhesive plaster is also used largely in making up and repairing electrical apparatus, as it is practically a non-conductor; is waterproof and adaptable to a variety of uses. Strips may be applied to the hands to prevent the action of caustic or corrosive liquids, and also in protecting the finger by a "finger-cot."

A quite modern application for this plaster, and one where it is most serviceable, is for the effectual closing of a room that is to be disinfected by vapors, such as sulphur fumes or formaldehyde gas, in which case the health officers take narrow strips of the plaster and cover all cracks and crevices in the doors, windows, etc.,—the room is thus made vapor tight, whereas before the use of this substance, the escape of vapors in disinfecting was one of the weakest points of the process. This also suggests the use of the plaster as an emergency weather strip or even to mend a broken window-pane.

Thus it will be seen that the uses of India-rubber Adhesive Plaster are almost without number, and in all cases it makes a cheap, strong and durable binder so flexible that it will conform to the shape of any surface. Probably, too, half of its uses have not yet suggested themselves.

We have one of your accident cases, and have found it an extremely good thing to have in our office, as it is frequently called into use. We also beg to acknowledge your copy of Johnson's First Aid Manual, for which we thank you.

SHELDON AXLE CO., Wilkes-Barre, Pa.

We have received a copy of Johnson's First Aid Manual, which we think very complete and easily understood

Your Johnson's Accident Case has been a very great help to us in several accident cases at our brewery, and we think every factory throughout the country should have one and a copy of your First Aid Manual.

JOHN F. BETZ & SON, L'T'D., Philadelphia.

RED CROSS ABSORBENT COTTON.

This material is the product of modern times, and is a most useful article in the factory, shop or household. Absorbent cotton does not mean ordinary cotton, or cotton batting, but a specially prepared material whereby the elements in ordinary cotton (oil, wax, fat, etc.) which prevent absorption, are removed. Properly prepared absorbent cotton absorbs liquids very freely, and for this reason has come to be used quite largely in surgical dressings. For an application to wounds, absorbent cotton has taken the place of material used for such purposes.

There are many kinds of absorbent cotton in the market, sold in drug stores, dry goods stores, barber shops, and, in fact, in all sorts of places. Many kinds of (so-called) absorbent cotton are not suited for wound-dressing purposes. Very often they are made in cotton mills of waste cotton; are filled with dirt, dust, leaves, etc., and wholly unsuited for wound-dressing or other delicate purposes.

In addition to the uses for wound-dressings as suggested throughout this manual, absorbent cotton has a large use for mechanical, laboratory and household purposes. Absorbent cotton is useful as a filter for almost any liquid. It is now employed extensively in filtering water and solutions, and in dairies for filtering milk and cream. For household uses a filter for any purpose can be quickly made by wadding some absorbent cotton into the neck of a funnel and pouring the liquid to be filtered upon the cotton. For filtering and straining purposes, cotton is much more effective and far cheaper than any other substance. In filtering watery fluids with absorbent cotton, the cotton should not be packed too tightly in the neck of the funnel. With light liquids, the cotton may be packed more firmly. Absorbent cotton is also useful for a thousand and one household purposes not necessary to be here designated.

For all such purposes, as well as for wound-dressing, it is absolutely necessary that the cotton should be pure; that is to say, free from all chemicals, dirt or foreign material of any nature. In the largest and most careful chemical and other laboratories, in many of the most extensive dairies, the absorbent cotton made by Johnson & Johnson is preferred for the uses above enumerated. Careful surgeons have found by experience that the absorbent cotton prepared by Johnson & Johnson is absolutely pure, surgically clean, aseptic and altogether reliable for dressing wounds.

Johnson & Johnson's Absorbent Cotton is put up in a blue package; the cotton itself is rolled in blue tissue, and upon the outside package is a label, a conspicuous feature of which is their red cross trade-mark, and the signature of Johnson & Johnson.

The blue carton with a label bearing the red cross trade-mark, containing sterilized cotton, has grown in the minds of surgeons, nurses and patients to be emblems of absolute reliability, and thus Johnson & Johnson's Absorbent Cotton has attained as a common title "Red Cross" Cotton.

The red cross is the trade-mark of Johnson & Johnson and appears on the labels of all their goods as a guarantee of the genuiness of their products. They also originated the blue carton and the blue tissue paper between the layers of cotton. But other makers of absorbent cotton, presumably to make their cotton appear to be as good as Johnson & Johnson's, roll their cotton in blue tissue, put it in a blue carton and, worse still, print a label bearing a red star, a red square, a red wheel or a red something that is intended to look like the genuine "Red Cross" Cotton. This, however, is an unfair and an unlawful means of gaining trade; more than all, it is often very disappointing.

The genuine Johnson's Absorbent Cotton, in a blue carton, bearing their red cross trade-mark, is absolutely pure cotton; it is germ-free, sterilized—it costs no more than other kinds. It will be well, therefore, for users to look for the red cross and the signature of Johnson & Johnson when this kind is desired.

MEDICATED COTTON.

Cotton impregnated with antiseptics or germ-destroying solutions is known as antiseptic or medicated cotton. In the first days of the Listerian system of surgery, antiseptic cottons were very largely employed for wound dressing, but in modern times, they have, to a great extent, been replaced either by plain sterilized cotton, such as Johnson's Red Cross absorbent cotton or by absorbent gauze.

The following kinds of medicated or antiseptic cottons are prepared by Johnson & Johnson and put in packages of various sizes, similar to absorbent cotton packages.

Carbolated cotton, or absorbent cotton impregnated with carbolic acid.—This is intended for use in applying carbolic acid to infected wounds. It should only be used under the advice of a physician.

Borated cotton which is absorbent cotton impregnated with a solution of boracic or boric acid. This has a mild antiseptic or disinfecting action, and is sometimes applied to old sores and ulcers to absorb and disinfect the discharges.

Salicylated cotton, or absorbent cotton impregnated with a solution of salicylic acid. This should only be used under the advice of a physician.

Iodoform cotton, or absorbent cotton impregnated with a solution of iodoform. The Red Cross iodoform gauze, elsewhere spoken of in this manual, is much preferable to iodoform cotton.

Iodized cotton or cotton impregnated with iodine. This should only be used under the advice of a physician.

Styptic cotton, or absorbent cotton impregnated with a solution of iron. This was formerly used to a large extent to check bleeding, being applied directly to the bleeding surface; the iron causing a coagulation of the blood.

Modern surgeons do not use Styptic cotton for this purpose. It is much preferable to apply pressure, as elsewhere delineated in this manual. However, for simple cases where capillary bleeding is excessive, Styptic cotton can sometimes be employed with good effect. It is also prepared by Johnson & Johnson in sheets called Styptic leaves, which are used for the same purpose.

The foregoing medicated or antiseptic cottons can be procured at any drug store.

SURGICAL GAUZE.

A thin open mesh cloth, resembling cheese-cloth and mosquito netting, is used by the surgeon to a large extent. Gauze for dressing wounds should be especially prepared for the purpose, and should not be such as is purchased in a dry-goods store, as such gauze has probably been made in a cotton mill where the requirements of surgery are not taken into account.

Johnson & Johnson prepare surgical gauze in a variety of forms, the most useful of which for general purpose in dressing wounds, is what is known as Plain Red Cross gauze. This is gauze cloth specially prepared and woven for sur-

gical purposes, with all the foreign elements removed and the gauze made very absorbent. Many million yards of this kind of gauze are used in hospitals and by surgeons for wound-dressing purposes every year.

Red Cross Gauze is put up in packages of various sizes, from one yard upward. The packages are sterilized and sealed, and are thus ready for immediate application to any wound.

Gauze cloth is very convenient material for use in the household, and should be substituted for all kinds of cloths, pads, bandages, compressors, etc., in the sick room, and for dressing wounds and sores. Surgical gauze can also be obtained impregnated with antiseptics, such as iodoform, five per cent; boric acid, called borated gauze; carbolic acid, called carbolated gauze; corrosive sublimate gauze, etc. The use of Red Cross Iodoform Gauze has been spoken of elsewhere in this Manual; the other should be used only under the advice of a physician. Gauze cloth can also be procured cut up into bandages of widths from one inch upwards, and rolled into rolls of ten yards in length. These are very convenient and economical where extended and prolonged bandaging is necessary.

Johnson's Accident Case contains a supply of Red Cross bandages, plain Red Cross Gauze, and Red Cross Iodoform Gauze.

LINTINE

Lintine is highly absorbent cloth-like fabric, made by felting absorbent cotton fibers into thin sheets, and is largely used for wound dressing and other surgical purposes. It is a very suitable substance for many purposes in the household, as a substitute for absorbent cotton, lint, sponges, cloths, towels, etc. It can be readily cut into pads or cushions of any desired shape or size to suit the circumstances. It absorbs discharges more readily than ordinary cotton or lint, and is much cheaper and more easily handled.

The uses to which it can be put are very numerous. Small pieces may be rolled into mops or sponges for applying medication to the throat or nose. Small squares may be used for handkerchiefs for consumptives and diphtheritics. It is also employed as sanitary napkins, diaper cloths, etc.

Lintine is surgically clean, sterilized and aseptic. It has the advantage of having no loose fibers to irritate a wound; no waste; it tears or cuts readily; is cleanly and compact and has fifty per cent. more surface than cotton or lint.

MATERNITY OUTFITS

In modern practice in confinement cases there is required a supply of clean sterilized dressings for a successful outcome. In many instances health and life have been sacrificed because of infection, due to the lack of proper materials.

The patient does not always know what is required for the maintenance of surgical cleanliness, and this is particularly true of young women, pregnant for the first time; for, in addition to their entire ignorance on the subject, they are often so filled with the diffidence of youth and inexperience that they will not ask advice of their friends or acquaintances.

To meet this necessity Johnson & Johnson have provided two emergency outfits. These cases have been gotten together by the aid of several of the most experienced obstetricians in this country.

SIMPSON'S MATERNITY PACKET

This contains articles for which there are no emergency substitutes. Just such articles as are necessary for the comfort of the mother, the safety of the child, and the convenience of the physician and nurse. This packet list has been found to lack no single important article. Packed securely in a substantial box and protected from uncleanliness and infection, it contains:

ONE OBSTETRIC SHEET, a well made blanket of gauze and cotton, one yard square, for protecting the bedding and mattress under the patient. After use to be withdrawn and destroyed.

ONE POUND LINTINE, made of sterilized absorbent cotton felted into sheets. This material covers 50 per cent. more surface than cotton or lint, is more absorbent, it cuts and tears readily into any desirable form of dressing. Useful for compresses, obstetrical pads, cloth for covering bedding, patient's body, for absorbing and disinfecting discharges, etc., etc.

TWO YARDS OF ASEPTIC GAUZE (sterilized and sealed), for bandages, wash-cloths, etc.

ONE SILK LIGATURE, sterilized in sealed packet (not to be opened until wanted for use) for tying the umbilical cord.

ONE ASEPTIC SPONGE, sterilized and wrapped. (Not to be opened until wanted for use) for absorbing, bathing or washing.

ONE COMPRESSIBLE TUBE OF CARBOLIZED PETROLATUM for lubrication and inunction. Also useful in dressing sores, softening scabs, excrescences and skin diseases. In the latter use, toilet powder applied after anointing is a desirable adjunct.

ONE PACKAGE JOHNSON'S ANTISEPTIC BABY POWDER, an antiseptic and healing toilet powder, a desirable dressing for the skin. For use after washing and bathing by dusting in the folds and crevices of the skin, to keep the skin cool, dry and soft. It prevents chafing and soreness.

ONE CAKE SURGEONS ANTISEPTIC SOAP, useful for general washing and disinfection of dishes, utensils and instruments, for disinfecting the hands of the physician and nurse, for the disinfection of dressings, for douches, irrigation, or moistening dressings and pads.

ONE PIECE OF CHAMOIS SKIN, useful as a durable wash-cloth for applying toilet powder, etc.

ONE MUSLIN BINDER, 36x48 inches. Sufficient for two abdominal bandages of good width and requisite firmness to admirably suit the purpose.

TWO FLANNEL BINDERS, 6x18 inches, for abdominal bandages for infant.

ONE DOZEN LINT SQUARES, for washing infant's eyes, making pads, etc.

ONE PACKAGE SAFETY PINS.

ONE CHART, for use of nurse and physician in making birth records.

Simpson's Maternity Packet is sold at most drug stores, the usual price being three dollars. If it cannot be procured, it may be ordered direct. In such case the name of your dealer should be sent. This will insure a saving of expense.

COOKE MATERNITY OUTFIT

A second packet is known as the Cooke Maternity Outfit, and is put up by Johnson & Johnson according to the suggestions of Joseph Brown Cooke, M.D., of New York City, Surgeon to the New York Maternity Hospital, Lecturer on Obstetrics to the New York City Training School for Nurses, etc.

THE COOKE MATERNITY OUTFIT CONTAINS:

SIX ABDOMINAL BINDERS, each 1½ x ¾ yard.
TWENTY-FOUR SANITARY (VULVA) PADS, made of absorbent cotton and covered with bleached gauze, sterilized and wrapped.
TWO OBSTETRICAL SHEETS.
ABSORBENT COTTON, two ½ pound packages.
SAFETY PINS, two papers of large and one of small size.
ONE NAIL BRUSH.
TWELVE SQUARES OF LINTINE for cleansing the infant's eyes and mouth, immediately after the birth of the head.
ALCOHOL, for dressing the cord and for bathing purposes.
SYNOL SOAP, for disinfecting and lubricating the hands and instruments.
OLIVE OIL, for anointing the infant immediately after birth, before it is bathed.
SATURATED SOLUTION BORIC ACID, sterile, for cleansing the infant's eyes and mouth immediately after the birth of the head, and afterward for bathing the nipples and washing the baby's mouth before and after nursing.
STERILIZED VASELINE, in collapsible tube.
CASTILE SOAP.
ONE BOX JOHNSON'S BABY POWDER.
RED CROSS LINEN BOBBIN TAPE, in sterilized envelope, for tying cord.
ANTISEPTIC TABLETS (Bichloride), one bottle for making antiseptic solutions at the time of labor, and afterward for the nurse's use.
TWO SPONGES, of different sizes, for the infant; the larger for the body and the smaller for the face and neck.

Each article is properly sterilized, wrapped and sealed, and the whole packed in a substantial box.

The Cooke Maternity Outfit can be secured through first-class drug stores and surgical supply dealers, but should there be any difficulty in procuring the outfit, write the manufacturers, Johnson & Johnson, giving the name of your dealer and they will see that the outfit is supplied. The usual price charged by dealers for the Cooke Maternity Outfit is $7.50.

Every expectant mother should send to Johnson & Johnson, New Brunswick, N. J., for a copy of "Hygiene in Maternity," a book of 48 pages containing suggestions for preparation for the lying-in period. It is helpful for mother, nurse and physician.

BABY POWDER

Johnson's Antiseptic Baby Powder is a preparation very markedly superior to the cheap toilet powders dispensed so widely. The selection of the best grade of materials, and the fact that it is prepared in a factory where are the best facilities and the utmost care for surgical cleanliness—ensure a very superior article.

The base is emollient mineral talcum. With this are combined antiseptics in the manner and proportions recommended by the leading authorities on care and treatment of the skin.

The quality of the base and the exquisite perfume at once stamp Johnson's Baby Powder a delightful requisite for any toilet table. It may be described as an article of refinement.

Johnson's Baby Powder is a deodorant and a healing dressing as well as a powder. The highest medical authorities have commended it on this account, calling it a perfect toilet powder for mothers, babies and nurses.

Besides its beneficial effects upon the tender skin of a new-born infant, Johnson's Baby Powder is surpassingly agreeable and suitable in the ordinary toilet uses.

DIRECTIONS FOR USE

FOR BABIES.—As soon as the new-born child has been washed, the skin should be dusted, especially in the folds and crevices, with Johnson's Antiseptic Baby Powder after each time the infant is bathed. This will prevent chafing and the soreness so likely upon the tender skin.

Around the face and mouth, where the baby is apt to moisten the skin frequently with saliva, the powder should be applied very often. Its absorbent and emollient action will prevent chapping.

Johnson's Baby Powder, besides soothing and softening the skin of the infant, will destroy all the disagreeable odor of the body and supply instead a delicate and delightful perfume.

FOR THE MOTHER.—The skin should be dusted over with Johnson's Antiseptic Baby Powder each time it is washed. This is very important, where, as on the thighs, the skin may be several times wet with poisonous discharges. The antiseptic powder completes the work of the antiseptic soap; the skin is thoroughly cleansed. An application of Johnson's Baby Powder after each washing of the skin is much preferable to a hard rubbing with a towel. It secures absolute dryness without the abrading and chafing entailed by the hard rubbing. Where washing must be frequent, as in maternity cases, this is a most important point.

In the period of nursing, the nipples frequently become sore. In such case they should be rubbed with cold cream or vaseline and then thoroughly dusted with Baby Powder.

FOR PERSPIRATION.—In cases of excessive sweating, dry the skin and dust the arm pits, thighs, feet, etc., with the powder. For sore, swollen, tired, perspiring feet, powder them thoroughly night and morning, rubbing in the powder, and allow it to remain. Sprinkle the powder into a new shoe and it will go on easily.

The powder may be used frequently. It will relieve prickly heat, rash, skin eruptions and all other affections caused by heat. It will form a protective covering; it will keep the skin cool, dry and soft; it will relieve all irritations, inflammations, itchings and burnings.

AFTER BATHING.—After bathing or washing, dry the skin thoroughly and then dust the entire body with the powder. It not only preserves the skin and prevents chafing, but it also absorbs and disinfects all skin secretions. It is a perfect dressing, for it is not affected by moisture, does not cake or become rancid.

AFTER SHAVING.—It is refreshing to use after shaving. After the face has been washed and thoroughly dried, sprinkle the powder on the hand or a soft cloth and rub over the face. If the face is tender apply the powder on retiring and allow it to remain. It will keep the skin cool and dry.

OBLITERATION OF WRINKLES BY "Z O" ADHESIVE PLASTER

Wrinkles are formed by habitually scowling, frowning, laughing and other habits of puckering up the face.

Wrinkles never improve a face and often make a person look many years older than they really are; therefore, most people will be glad to learn that, except in the case of very old people, wrinkles may easily be eradicated. The application of "Z O" Adhesive Strips over the wrinkles has been found to completely smooth out the skin and leave it soft and satiny as a baby's.

TO REMOVE WRINKLES FROM THE FACE

Before retiring, bathe the face with warm water and wipe dry, then hold the wrinkled part tense with the fingers of the left hand, and apply "Z O" Adhesive Strips one-quarter inch wide, and leave on all night.

In some cases one application is sufficient to completely obliterate the wrinkles, but much depends upon the condition of the skin and depth of wrinkle.

"Z O" Adhesive Strips will adhere without the aid of heat or moisture.

To remove the plaster, daub lightly with a piece of cotton or cloth dipped in alcohol or kerosene oil; it will require but a few seconds to moisten the plaster, which will then come off without pain or irritation.

FOR WRINKLES AT CORNERS OF EYES—Cut "Z O" Aseptic Strips slightly narrower at the end to go nearest the eye. Be sure wrinkle is stretched out smooth before applying.

FOR WRINKLES ABOVE THE EYEBROWS—Cut "Z O" Aseptic Strips crescent shape and apply over wrinkle, be careful to hold skin tense while applying.

FOR WRINKLES ACROSS THE FOREHEAD—Hold skin tense with first and second fingers of left hand, and apply on and parallel with the wrinkle.

FOR WRINKLES BETWEEN THE EYES—Cut "Z O" Aseptic Strips slightly narrower at part to go nearest the nose; hold skin tense, and apply over wrinkle.

FOR VERTICAL WRINKLES AT CORNERS OF MOUTH—Hold skin tense and apply "Z O" Aseptic Strips vertically at each side of mouth.

FOR WRINKLE FROM NOSE TO CORNER OF MOUTH—Hold skin tense, and apply "Z O" Aseptic Strip over the wrinkle; put the end of the strip close to the nose.

FOR WRINKLE IN THE CHIN—Hold skin tense, and apply "Z O" Aseptic Strip horizontally over the wrinkle.

FOR DOUBLE CHIN WRINKLE—Hold head well up, and apply "Z O" Aseptic Sirip over and parallel with the wrinkle.

"Z O" Aseptic Strips are absolutely non-irritating and aseptic. The finest adhesive plaster made.

OBLITERATION OF WRINKLES BY THE USE OF "Z O" ADHESIVE PLASTER

BY ROBERT T. MORRIS, M. D., NEW YORK CITY

The simplest and easiest remedy for obliterating wrinkles is perhaps found in the "Z O" Adhesive Plaster. Its non-irritating qualities make it also a most safe agent in this connection. It not only does not injure the skin in any way, but improves its texture; in removing the wrinkles it also clears and beautifies the complexion.

The technique is so simple that a description scarcely seems necessary, and the following illustrations will prove an excellent guide for the application of the plaster.

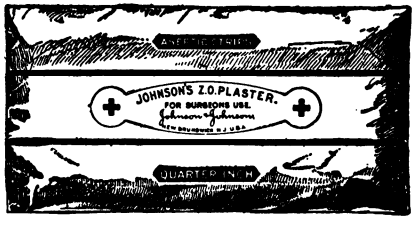
Of course, the underlying principle is to keep the skin tense for the longest possible time. This is best accomplished by applying the plaster just before retiring, and permitting it to remain until the following morning. Before applying the plaster the wrinkled skin should be drawn tense with the first and second fingers of the left hand, while the plaster, in narrow strips is applied over the surface and parallel with the wrinkle. It is immaterial whether a wide or narrow strip is used, but as wrinkles usually make their appearance at the angle of the eyes, between the eyes, etc., a narrow strip must be used. Unless the wrinkle to be obliterated is a very deep one, it is never necessary to apply more than one layer of the plaster at a time.

After a single application the improvement will be noticeable. No exact time can be stated for a complete obliteration of lines, much depending on the age of the individual, etc,

To remove the plaster, daub it lightly with a piece of cotton, which has been dipped in alcohol; it will require but a few seconds to moisten the plaster when it can be removed without causing any pain or irritation.

A WRINKLE REMOVER

Several surgeons have found that "Z O" Aseptic Strips are a most excellent application for the removal of wrinkles about the face.



The plaster is absolutely non-irritating, sterilized and aseptic, and rightly applied will do the work. The mode of applying is illustrated in the pages which follow.

To remove; moisten with cotton wet in alcohol (or use kerosene followed by alcohol.)

JOHNSON & JOHNSON, New Brunswick, N. J., U. S. A.

EMERGENCY MEDICINES

It is not the intention of this Manual to encourage self-medication, so medicines for internal use in emergencies are therefore omitted. In traveling, camping and exploring expeditions, outfits for simple remedies for use in emergency are sometimes necessary, and in such cases it is recommended that a competent physician be consulted. Remedies suitable to the climate and other conditions which may be involved can, by this method, be selected with exactitude. It is particularly urged that a collection of drugs, and especially poisons, should not be kept in the household, factory or work shop unless under lock and key, in charge of a person skilled in their use.

The following articles are mentioned because they are often called for in factory emergencies and are more or less known in first aid practice.

ARNICA.—The tincture of arnica, sometimes called arnica liniment, is popularly supposed to be of value in accidents, especially those of the nature of sprains, bruises, etc. It may not be generally known that arnica partakes of the nature of a poison, and is especially dangerous if taken internally. For external application strong preparations should not be applied full strength, as inflammation always follows in cases of tender skin. The tincture or other preparations as procured at the drug stores, should always be diluted with water before application. Undoubtly the dressings recommended in this Manual are superior to arnica for cuts, lacerations, contusions, etc.

WITCH-HAZEL.—Also known as extract of witch-hazel, etc. This is a popular remedy for sprains, contusions, wounds, swellings, etc. It forms a mild and suitable application for chapping, and is used by the laity for burns, scalds, cuts abrasions, as well as in irritated and inflammatory conditions. It has the merit of being non-irritating, and can with propriety be substituted for arnica, or the many highly irritating and dangerous liniments so often recommended. It may be applied (full strength or diluted with water) directly to the afflicted spot by the aid of a compress made of gauze or cloths saturated with the extract of witch-hazel.

CAMPHOR.—Camphor is supplied by druggists in the form of gum camphor, or in liquid form in the shape of spirits of camphor, tincture of camphor, etc. Its properties and uses are too well-known to need comment. It should be remembered, however, that in large doses, when taken internally, camphor is a narcotic and irritant poison. It should never be taken in the solid form internally, except under the advice of a physician. Spirits of camphor if given internally should be diluted with some other liquid, or dropped upon sugar. This course will prevent irritation of the mucous membrane of the mouth, etc. The internal dose of the spirits of camphor is from one to twenty drops. Camphor should never be applied full strength directly to open wounds, irritated or inflamed surfaces.

GLYCERINE.—Glycerine is often recommended for burns. Mixed with equal parts of rosewater it makes a very soothing lotion for chapped hands and, one part whiskey, one part lemon and two parts glycerine is a well known cough remedy.

AMMONIA.—It should be distinctly impressed upon the mind that there are several preparations of ammonia, and care is necessary to distinguish between them. For instance, we have what is known as ammonia water, liquor ammonia, or solution of ammonia, sometimes called spirits of hartshorn, and hartshorn.

This is supplied by druggists in several strengths, but in all strengths it is an energetic preparation, highly irritating and poisonous if taken internally. Applied externally in any considerable strength, it will cause blistering and painful results. Ammonia in any form should not be applied to an open wound or irritated surfaces (except snake bites, stings of insects, etc., where the intention is to neutralize the poisons.)

The vapor of the water of ammonia inhaled through the nostrils makes a powerful impression upon the nervous system, and is used in fainting, epilepsy etc., but should be applied with caution. A strong preparation of ammonia applied to the nostrils is liable to produce a violent shock. A handkerchief, wad of absorbent cotton or other material should be sprinkled with the ammonia and held at a safe distance from the nostrils. Contact with the skin will cause irritation. Externally, water of ammonia is sometimes used in a diluted form, as an application for external pains, for mild chilblains, stings of insects, bites of mosquitoes, etc. Combined with olives or other oils it forms a very active liniment.

In purchasing ammonia water, the buyer should be cautioned not to procure what is known by the druggist as the strongest ammonia water, or concentrated ammonia water.

AROMATIC SPIRITS OF AMMONIA.—This is the only preparation of ammonia intended for internal use. It is a stimulant, and is used in sick headache, hysteria, colic, fainting, in doses of from ten to thirty drops given in sweetened water.

BICARBONATE OF SODA.—Also known as baking soda, etc. This preparation should be distinguished from sal soda or washing soda, which is used quite largely in the household.

In this Manual, soda has been recommended in the treatment of burns. It is also recommended for use as an antidote in poison by acids, etc. It is a white powder, and is preferably kept in a glass bottle, but may be kept in a tin can or box.

VASELINE, PETROLATUM, ALBOLINE, COSMOLINE, ETC. are often recommended as applications for burns, scalds or inflammatory conditions. If of good quality, they are useful applications to a variety of injuries, being non-irritating and non-poisonous. They also have the merit of never becoming rancid, and are preferable to ointments, cold cream, etc., for emergency uses. Many first aid manuals recommend the use of carbolized vaseline, but this possesses no advantages over the plain preparation.'

TURPENTINE.—What is known as the spirits or oil of turpentine is considered as a necessary adjunct to first aid. In former days it was applied to wounds, ulcers, burns, etc. as an antiseptic, and to promote rapid healing. Applied full

strength it is highly irritating and may be used wherever mustard has been recommended as an external application, but mustard plasters are much more convenient and safe.

When applied externally, a soft cloth should be dipped in turpentine, wrung out nearly dry and laid on the surface. Where it is necessary in an emergency to clean the wound of grease, soot, etc., turpentine, or ordinary benzine, or naptha may be used. It should be noted that both of these preparations are inflammable, and should not be used near an open light. Turpentine should not be given internally except under the advice of a physician.

WHISKEY.—Whiskey, brandy, wine and other spirits are considered as a necessary adjunct for first aid. Their free use is not recommended. Very often they do more harm than good. Hot water, coffee, tea, aromatic spirits of ammonia are to be preferred. (See Shock).

When it is considered necessary to use stimulants, they should be of the very best quality, and should be used in small doses, in hot water, repeated if necessary. Children should never be given spirituous stimulants except in extreme cases, such as in collapse, where ten to twenty drops may be given in water.

PEPPERMINT.—The essence of peppermint or the tincture of peppermint is a well known and popular remedy as an anti-spasdomic, a remedy in vomiting, colic, bowel complaints, etc. The usual dose is from ten to twenty drops on sugar or in sweetened water.

The oil of peppermint is a very strong preparation and should not be used except under the advice of a physician.

GINGER.—The essence or tincture of ginger is a popular carmidity, and is used in troubles of the digestive organs, bowel complaints, etc. The dose is from ten to forty drops in sweetened water, milk, wine or other liquid.

MISCELLANEOUS.

TEMPERATURE OF THE SICK ROOM.—Sixty-eight degrees Fahrenheit is considered a good average temperature for the sick room. In certain diseases, such as fever, brain trouble, etc., it is sometimes allowed to run lower than this, but in throat and chest affections it should be higher.

When a patient is being washed or dressed, or a change is made of clothing or sheets, the temperature should be kept at about seventy or thereabout. During the night and towards morning the sick or injured person is very susceptible to a change of temperature, and at the time care should be taken of the room and covering of the person.

VENTILATION.—A constant and uniform supply of fresh air, and the removal of impure air is important in the sick room. The best method of introducing pure air without injuring the patient is to drop the window slightly at the top. To change the air in the sick room open the windows in an adjoining room and admit the air. After the air thus introduced has been warmed, open the door between the two rooms and swing it back and forth, This will bring in a supply of pure warm air.

Air is not pure simply because it is cold; the air of the corridor or hallway may be very impure and yet cold. Night air is not necessarily dangerous.

The plumbing and drainage from the sick room should be carefully examined, and if considered a source of danger, the connections with the sewer should be closed by corks.

BATHS.—Cold baths are used to reduce fever, in heat stroke and other cases where the temperature is high. The usual method is to put the patient into a bath between seventy and eighty degrees Fahrenheit, and reduce the temperature by adding cool water until it reaches sixty or sixty-five degrees.

Tepid baths are those in which the temperature of the water varies from eighty to ninety degrees. In warm baths, the temperature varies from ninety to a little less than one hundred. These two baths are used where there is excitement, irritability, or affections of the nervous system, etc.

Hot baths are useful in cases of shock or apparent drowning, depression, etc. The temperature of water in a hot bath varies from ninety-eight to one hundred and ten degrees Fahrenheit.

Upon leaving the bath the skin should be quickly dried and the person put to bed as quickly as possible. Hot baths may produce fainting, and should always be taken in the presence of an attendant. Always use a thermometer to take the temperature of the water; the hand is very deceptive.

THE PULSE.—The average pulse rate in an adult is seventy-six beats per minute. This rate varies according to age, as shown in the following tables:

At birth	130–140	
1st year	115–130	"
2d "	100–115	"
3d "	95–105	"
7–14 "	80– 90	"
14–21 "	75– 80	"
21–60 "	70– 75	"
Old age	75– 80	"

In a female the pulse is from ten to fifteen beats quicker than in a male of the same age. The pulse is also quickened by excitement, after taking food; and is retarded by cold, sleep or fatigue.

To count the pulse place the finger over the artery at the wrist; count the beats for fifteen seconds, multiply this by four, and the result is the number of beats per minute.

RESPIRATION.—The average respirations per minute in an adult of good health is from sixteen to twenty. The respiration varies according to age, etc., as is shown by the folllowing table:

At birth	44
5 years	26
15–20 "	20
20–25 "	18–19
25–30 "	16
30–50 "	18

The respiration can be counted by watching the movements of the chest; by listening to the breathing, or by placing the hands upon the chest and counting the number of movements per minute.

BEDSORES.—Bedsores form in a weak or emaciated person about the hips, on he spine, shoulder-blade, or wherever the bones press upon the flesh. Bedsores caused by neglect are often the cause of death.

They should be treated when the first sign of redness or pain appears. The part should be bathed several times a day with alcohol and water. The pressure should be relieved by taking some pillows, arranging them and placing the body upon them without allowing the affected place to touch anything. Air pillows can be procured for such purpose. In absence of these, adhesive plaster strips applied in such a way as to relieve the pressure, or better still the vaccination shields referred to in another part of this manual can be utilized.

APPARENT DEATH.—Hold the hand of the person apparently dead before a candle or other light, the fingers stretched, one touching the other, and look through the space between the fingers toward the light. If the person is living, a scarlet red color will be seen where the fingers touch each other, due to the still circulating fluid food as it shows itself between the transparent, but yet congested tissues. When life is extinct this phenomena ceases. Another method is to take a cold piece of polished steel, for instance a razor blade or table knife, hold this under the nose and before the mouth; if no moisture condenses upon it, it is safe to say that there is no breathing.

In cases of severe shock, etc., it is not sufficient to test the cessation of the heart-beat by feeling of the pulse at the wrist. An acute ear can generally detect the movement of the heart by the sound when the ear is applied to the chest or back. The electric battery may be used under the advice of a physician in doubtful cases. Ordinarily it is very easy to decide between life and death, and the fear of being buried alive is without good foundation.

In cases of death and apparent death, it is best to disturb the patient as little as possible. Do not unnecessarily alarm friends, and do not give up working while there is the slightest ground for hope. The attendant should notice the exact time at which death takes place. Care should be taken not to announce death prematurely. Shortly after death there may be a high rise of temperature, produced by chemical changes in the food. This rise of temperature is followed by a pecular stiffening of the muscles, called "rigor mortis.' Before this latter condition takes place, the body should be prepared for burial. If no undertaker is at hand, the body should be washed with a weak solution of some disinfectant, such as Camphenol, Surgeons Cresol Soap, etc.

If there is any difficulty in keeping the eyes shut, put a small wisp of cotton upon each eye ball under the lid. To keep the mouth closed, put a firm wedge under the jaw in the hollow of the throat. After the jaw is firmly set, the wedge may be removed. Straighten the limbs by tying the feet together with a tape. Pack all the orifices of the body with absorbent cotton; bind a cloth around the hips. Over this any clothing desired may be adjusted. Cover the face and all with a sheet. Any slight discolorations, etc., may be made less conspicuous by by dusting them over with toilet powder.

After the removal of the body, the room should be thoroughly cleansed, all the appliances removed, the bedding and clothing sent out to be disinfected, and the room cleansed and disinfected.

HINTS ON FEEDING AN INVALID.—The kind of food to be given in every caes should be decided by the physician; how to prepare and administer food is a matter for the attendant. Everything should be the best of its kind, well cooked, seasoned and served. Food should never be prepared in the presence of an in-

valid, nor should the smell of cooking be allowed to reach him. The attendants should never eat in the sick room. Everything should be served as nicely as possible; clean napkins, spotless china, shining silver and glass. Avoid having anything spilled over the outside of dishes, upon the tray, etc. Hot things should be served very hot, and cold ones very cold. Sick persons require more salt and less sugar than those in health. Bring everything into the sick room nicely covered, either with dishes or napkins. Whatever is not eaten should be at once taken away; it is always better to bring too little than too much. Ascertain from the physician how much it is desirable that the patient should take in twenty-four hours, and divide the quantity up into portions suitable for regular intervals. As a rule the patient should never be aroused from sleep for food. Nourishment the last thing at night will often help send the patient to sleep.

If the patient is helpless the attendant should assist by giving the food slowly, in small quantities allowing each morsel to be swallowed before another is given. If there is difficulty in swallowing take advantage of the inspiration. In feeding a patient see that his head is not turned to either side, as this may cause the food to run out at the corner of the mouth instead of down the throat. Fluid food can be given conveniently through a bent glass tube, which is procurable at the drug stores.

In fevers there is often great thirst, If the physician advises, it is quite safe to allow the patient all the water he may desire. It should be noted that a small glass full of water will be much more satisfactory than the same quantity in a larger vessel. Slightly bitter or acid drinks quench the thirst more fully than water alone. Hot water quenches thirst better than cold. Bits of ice are often refreshing. Small bits of ice swallowed whole are excellent to control vomiting. Sips of very hot water are very serviceable in vomiting.

FORMULAS.

CARBON OIL.—For burns, scalds, etc. Mix equal parts of lime water and raw linseed oil; shake thoroughly. This forms a thick, cream-like emulsion that will keep almost indefinitely. Where burning accidents are frequent, this mixture should be kept on hand ready for use. It can be used freely, as no harm will arise from the application of any amount. If linseed oil is not at hand, in an emergency olive oil or cotton seed may be used instead. Linseed is, however, the best.

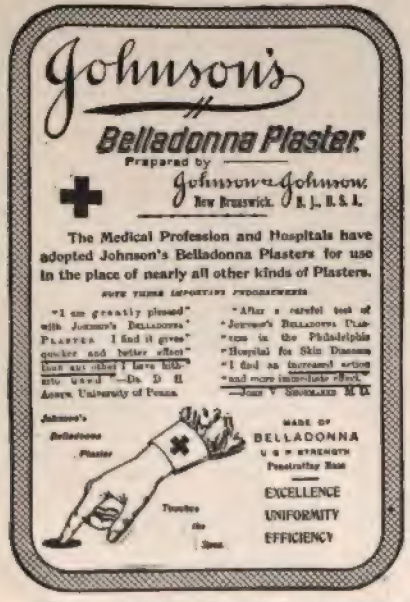
LIME WATER.—Lime water may be procured ready made at any drug store, and the lime water obtained from reliable druggists is fit for both internal or external use. For external use in an emergency where a drug store is not at hand, take a piece of lime weighing about one-half ounce (about the size of a walnut), slack it by gradually pouring water over it in small portions at a time; when slacked put in a bottle or other vessel and pour on a quart of water (cold); let it stand; pour off as wanted for use. In an emergency it may be used at once without clarifying.

INDEX

JOHNSON'S BELLADONNA PLASTER

Belladonna is one of the most valuable drugs known to medicine. As an external remedy to cure and relieve pain, and for many other diseased conditions, there is no remedy equal to a Belladonna Plaster. Dr. Caldwell, Professor of Materia Medica, Rush Medical College, says: "The action of Belladonna in a plaster form is a thousand times stronger than when taken internally."

Johnson's Belladonna Plasters are made to give the exact and the full and curative effect of belladonna, to relieve pain and cure disease.



Johnson's Belladonna Plasters are useful in

RHEUMATISM, LAMENESS,
DIZZINESS, NUMBNESS,
HEADACHE, WEAK BACK,
PAINFUL JOINTS, NEURALGIA,
MUSCULAR RHEUMATISM, GOUT,
SCIATICA, WEAKNESS OF JOINTS,
STIFFNESS OF MUSCLES,
LUNG AND CHEST PAINS,
PNEUMONIA, COLD ON CHEST,
PLEURISY, BRONCHITIS,
LUMBAGO, SPINAL PAINS,
BACKACHE, ASTHMA,
LOCAL CONGESTION,
WHOOPING COUGH,
PAINFUL COUGH,
ITCHING CHILBLAINS, Etc.

Representative hospitals, journals and physicians have adopted and endorsed Johnson's Belladonna Plaster as giving uniform and pronounced curative effects.

"After a careful test of Johnson's Belladonna Plasters in the Philadelphia Hospital for Skin Diseases, I find an increased action and more immediate effect." —John V. Shoemaker, M. D.

"I am greatly pleased with Johnson's Belladonna Plaster. I find it gives a quicker and better effect than any other I have hitherto used."—Dr. D. H. Agnew, University of Pennsylvania.

The true Johnson's Belladonna has the Red Cross Seal on each plaster.

JOHNSON & JOHNSON, New Brunswick, N. J., U. S. A.

JOHNSON'S DIGESTIVE TABLETS

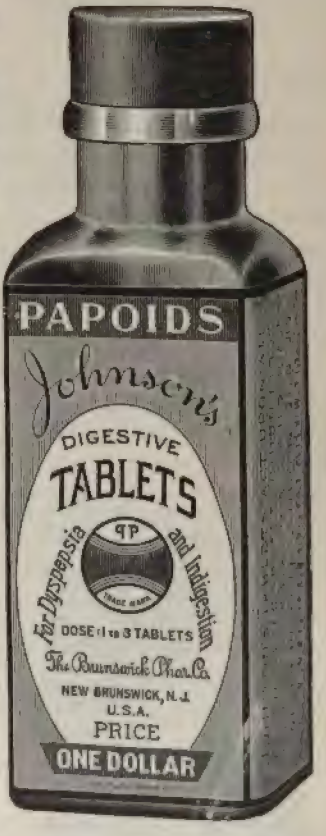
ALSO KNOWN AS PAPOIDS

Facsimile of small sized package of Johnson's Tablets. Price, 50 cents.

Johnson's Digestive Tablets have an agreeable taste and odor, may be swallowed whole, chewed or dissolved in the mouth. Dosage is accurate and convenient to take at such intervals as may be desired.

These tablets are made according to the following formula: Papoid, gr. i., Soda Bicarb., grs. iii.; Sacch. Lactis, Menth. pip., qs.

Johnson's Digestive Tablets are put up in two sized packages; small size contains fifty doses, enough to do a great deal of good and in many cases effect a cure. They are packed in a flat, blue glass bottle that is convenient to carry in the pocket. The bottle is incased in a yellow paper carton, which bears the distinguishing label, as shown in the cut, and sells for fifty cents.



Physicians' Size package contains 150 Tablets. Price, $1.

The large sized package, known as Physicians' size, is for the convenience of physicians and dispensers or for cases where it becomes necessary to continue the treatment. This size contains one hundred and fifty tablets and sells for one dollar.

Each tablet is this mark as shown in the  size and is stamped with the distinguishing cut. This mark should appear on every tablet.

Johnson's Digestive Tablets are for sale at all druggists.

THE BRUNSWICK PHARMACAL CO., New Brunswick, N. J., U. S. A.

WOOD'S FUMIGATORS

Wood's Fumigators are two-inch pyramids encasing a candle of formaldehyde, mixed with a slow burning material. To set one of these in a plate, and touch the tip with a lighted match, is all that is necessary to generate a gas that will thoroughly fumigate a small room or closet and drive away mosquitoes and other insects. Wood's Fumigators are now used by physicians to burn in their clothes closets after attending contagious diseases. One fumigator left burning in a clothes closet with the keyholes and cracks sealed, will penetrate every fiber of the clothing with the greatest germicide, formaldehyde gas. The fumes of formaldehyde are easily gotten rid of; a few minutes in the fresh air is all that is necessary, or it may be done by vaporizing a little ammonia.

Wood's Fumigators are easy to operate; will not destroy fabrics or colors and are cheap—price **10 cents.**

Wood's Fumigator

LISTER'S FUMIGATORS

Lister's Fumigator

Lister's Fumigator is a formaldehyde gas generator. It is not a complicated engine, but a simple four-inch box, made of fire-proof paper and perforated tin, containing a candle of solidified formaldehyde. Just touch a lighted match to the fumigator, close the windows and doors, and the work of exterminating insects and disease germs is begun.

Formaldehyde gas will kill mosquitoes and other insects.

Formaldehyde gas is the most deadly enemy to all disease germs.

Formaldehyde gas is easy to generate, with the Lister Fumigator.

Formaldehyde gas will not harm furniture, fine fabrics or pictures.

When disinfecting with Lister's Fumigator, it is not necessary to disturb the furniture, except to spread things out, in order that everything be disinfected.

Lister's Fumigators are the best, easiest to operate and cheapest disinfectant on the market.

JOHNSON & JOHNSON, New Brunswick, N. J., U. S. A.

NAME	DATE DUE
J. Floyd Bell	July 7 '17
R. Watkins (c.g.B.)	MAY 1 [illegible]
	MAY 28 1934